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ARBORETUM BULLETIN

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Concerning this issue...

The fall issue of the *Bulletin* traditionally includes the annual reports both of the Arboretum and of the Arboretum Foundation. This issue is no exception to the rule. However, other articles of interest hopefully will appeal to the general reader.

Parts II of the Witts' visit to England and of Arthur Kruckeberg's article on nomenclature are presented, as well as two delightful new "Leaves" from Brian Mulligan's Notebook.

We wish especially to call attention to a pair of articles on the plantings of the University of Washington campus. When the Editorial Board originally talked of soliciting such articles, Linda Brubaker, our representative from the College of Forest Resources, said that when she came to the University to present her seminar and be interviewed for her appointment here, it was spring, the cherries in the "Quad" were in bloom and she reported to her husband that this was undoubtedly the most beautiful campus she had ever seen. Certainly many students, faculty and visitors share these sentiments.

In pursuit of that subject, Patricia Gutter had discussed a few of these plantings from a landscape architect's point of view, and Frank Brockman had described some trees that are notable mainly for their historic interest. We hope that in the future he will find time to discuss other groups of campus plants as well.

Maps of the campus will help you find the plantings mentioned in these articles. They are obtainable during office hours at the Visitors Information Center, 4041 University Way NE, or at any of the campus gates. A number of METRO routes have campus destinations. If you plan to drive on campus, parking is most easily obtainable on weekends and between quarters.

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COVER

Trunk of an ancient bigleaf maple (*Acer macrophyllum*)
in the Denny Hall Area of the UW Campus
See article, "Some Notable Campus Trees."
Photo: J. Pirzio-Biroli

View of Bodnant from the west.

Endangered Plants and Botanic Gardens—II

JEAN and JOE WITT

In the last issue of the Bulletin *the Witts described the international conference on endangered plants at Kew and the beginning of their independent tour of Great Britain. In this sequel they introduce us to Bodnant in Wales and to several famous gardens and arboreta in England.*

All photographs in this article were made from Mr. Witt's color slides.

Regretfully, we left the University of Liverpool's Botanic Garden at Ness in the early afternoon to retrace our road back to Chester, then headed west into northern Wales to Conwy.[1] An ancient walled town, Conwy is on the north coast of Wales on the Irish Sea and is in the center of a highly popular resort area. Friday afternoon, the beginning of what promised to be a beautiful weekend weather-wise, was perhaps not the best time for us to be on those narrow winding roads, but we did survive. The overnight stay gave us an opportunity to visit Conwy Castle which looms protectively over the town, a 13th century reminder of less peaceful times in Great Britain.

Bodnant

The Conwy river led us south a few miles to Bodnant, the garden and home of Lord Aberconway, President of the Royal Horticultural Society. Mr. Charles Puddle, the Head Gardener, was kind enough to spend a few hours helping to orient us in this magnificent garden and pointing out many of the fine and unusual plants growing there. We were impressed by the camellias, large and lush plants which we had not seen in any quantity in other British gardens visited earlier. It is the site of Bodnant, however, which is truly spectacular, and great skill has been shown by the Lords Aberconway in developing the garden to take the greatest advantage of the view. The hall sits on a terrace above the Conwy River with a sweeping view across the valley to the rolling hills of the Snowdon range. Snowdon was sulking behind a cloud during our visit so we did not get to see the highest point in England and Wales. Below the house, a series of large terraces is carved into the hillside; their supporting walls serve as shelter for a large number of tender species. Bodnant's climate appears to be much like that of Seattle with similar winter temperatures and rainfall. By making skillful use of these walls, they are able to grow many plants at Bodnant which we find borderline hardy in Seattle.

The terraces are perhaps the major feature of Bodnant since they are such a tour de force. Nearly every bit of literature on the garden shows a photograph of the long "canal" with the stone Pin Mill at one end. This latter structure, built in 1730 as a garden house, was moved to Bodnant in 1938. Despite the beauty of the terraces, we were more taken with the magnificent plantings in other parts of the garden. Below the terraces are the magnolia borders containing a fine collection of species and hybrid magnolias along with camellias. Naturally, none of these plants was flowering but we could well imagine their beauty in the spring.

A steep trail led us down into the valley of a

[1] Formerly called Conway, the town has now resumed its Welsh name.

small stream, the river Hiraethlyn, the banks of which are planted with as fine a display of large conifers as we had seen. Walking upstream, we passed under Douglas firs of a size which would do credit to many stands of old growth timber in Western Washington. Large true firs (*Abies*), *Tsuga heterophylla* and *T. canadensis,* redwood (*Sequoia sempervirens*) and many other large forest tree species were underplanted with a wide array of large-leaved *Rhododendron* species. September not being the time for rhododendrons, we planted to slight this genus, but did, however, stop to admire the leaves and trunks of some truly huge specimens. We were especially attracted to a handsome *R. eximium* with rusty red indumentum on the underside of its leaves.

Repair work on a small dam kept us from wandering further along the river so we climbed out of the valley, turning for a final view down into the canopy of tall and stately evergreens below. The trail back to the house passed through a shrub border where a brilliant display of rose hips on various species made up for the lack of flowers.

Bodnant is primarily a garden of trees and shrubs, at least that portion open to the public, and did not seem to have the great displays of perennials we had seen in other British gardens. The topography of the garden—its sweeping views, streams and ponds, steep valley—and the thoughtful way these features are woven into a whole, as well as the wealth of fine plants expertly grown make Bodnant a must for the serious garden-oriented tourist.

About an hour's drive southeast brought us to the Welsh city of Llangollen (pronounced, as near

Old mill at Bodnant.

Bodnant, view across the valley.

as our untrained ears could determine, "Clan' gothlen"). Next morning a wrong turn prevented our continuing south into Wales as we had planned. Instead, we found ourselves back in England. Making the best of it, we stopped at Hereford to visit the lovely cathedral built of warm rose-pink sandstone, where we found a pleasant cloister garden with a few September roses. We learned from a garrulous waiter who recognized our American accents that the breed of cattle, Hereford, which we call "herferd" should properly be pronounced "harra' ford". Travel is so broadening.

Westonbirt Arboretum

Our destination at the end of the day was the Hare and Hounds Hotel, an old coaching inn in the Cotswolds near Westonbirt Arboretum, maintained by the Forestry Commission. We were met by Mr. Desmond Cousins, the Research Chief Forester, who showed us with evident and just pride their new visitors' center, an attractive glass and wood structure. Here we were shown a short, interesting film on David Douglas' discovery of the Douglas fir.

The Arboretum, as is true with many British public gardens, was developed as a private garden and later turned over to the government. It was started in 1829 by Robert Holford who had the vision to take some 150 acres of flat farmland and convert it into a forest. Many of the large trees date from that period, including a great number of western American conifers which were just being introduced into England at that time. A major feature of the Arboretum was also begun then—the wide avenues or rides which extend from Westonbirt house (not now part of the Arboretum) to its boundaries. Westonbirt is famous for its display of fall color, but we were too early to see it at its height. Maples of many species, *Liquidambar, Nyssa, Parrotia* and many other trees and shrubs

Westonbirt: View down Mitchell Drive.

were just offering a hint of color. The setting was perfect since the deciduous trees were set against a background of the great conifer collection, the perfect foil for autumn color.

Although we were not able to see Westonbirt at its most colorful time, we were very pleased to see many tree specimens that we are now growing in the Arboretum, but of a size that may take ours another hundred years to reach. Not all plantings in Westonbirt are old, however; we found a planting of ornamental cherries which was very recent, and there was clear evidence that the Arboretum is adding new material and removing less desirable specimens on a regular basis.

Part of the gounds, the Downs, was largely an open grassland with huge oaks and beech dotted about. The turf here was being mowed by a herd of cattle, an excellent labor and energy saving idea. It seems unlikely, however, that we could convince the Seattle Park Department to trade their lawnmowers in for cows.

From Westonbirt we drove to Bath, not to visit gardens this time but just to see the baths. The next day found us marvelling at the great pre-Roman stone circle at Avebury. We both felt we could spend a week there instead of half a day. Our road took us south through Bristol then into Taunton in Devon where we sampled the local cider. Early next morning we were at Tiverton for a visit to Knightshayes Court. Brian Mulligan has described the garden of Lady Amory in the *Arboretum Bulletin* (Vol. 37, No. 2, Spring, 1974 and Vol. 41, No. 1, Spring, 1978) so we will say no more about it other than to thank Mr. Michael Hickson for spending his valuable time showing us around on a day that was intermittently showers and sun.

Visitors' Center at Westonbirt Arboretum.

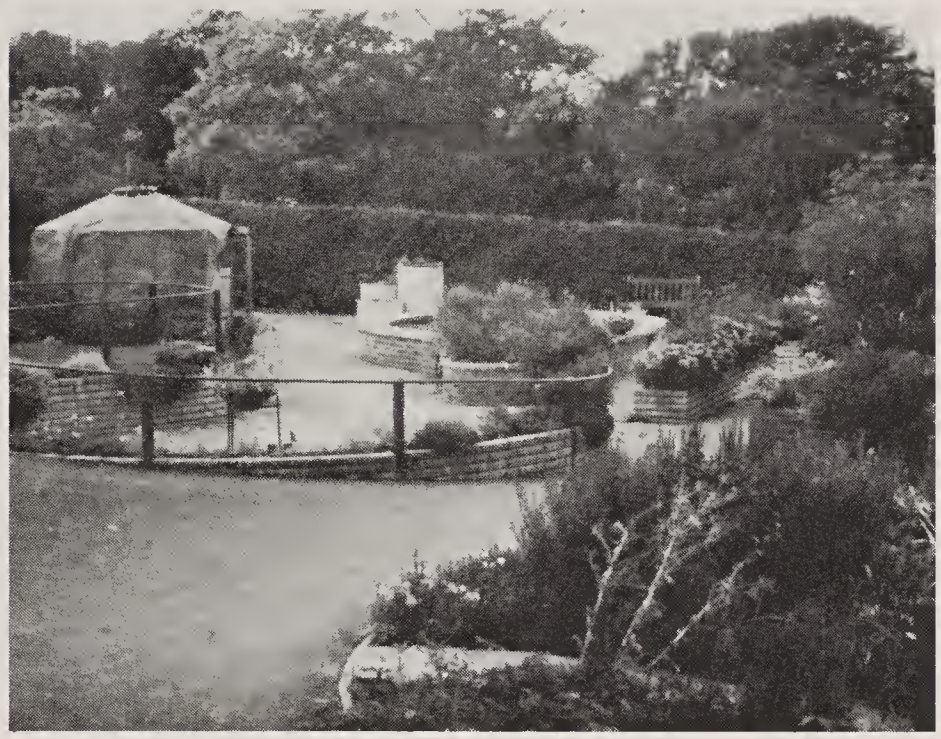
Hillier Arboretum

Our next stop was Romsey, a pleasant market town in Hampshire near the Hillier Arboretum. This Arboretum was given to the County of Hampshire by Mr. Harold Hillier, an outstanding nurseryman and one of the world's leading authorities on cultivated trees. Joe visited his home, Jermyns House, in 1966 when Mr. Hillier was setting out a large number of trees in the surrounding grounds and was surprised to see the changes which had occurred in 13 years. The garden around the house is now maturing nicely and the Arboretum plantings have been extended into the rolling countryside. As might be expected from this talented nurseryman, the collections are most varied. Some of the newly set-out trees, however, had suffered rather badly, possibly from winter injury. The older material was in excellent condition and growing very well indeed. Mr. Hillier took such obvious pleasure in showing us especially choice specimens that it seems probable we took more than our share of his time. We were able to send him a plant of the hybrid *Mahonia* 'Arthur Menzies' as a small return for his kindness when we returned home. A more complete account of the Hillier Arboretum may be found in *The Garden* (Vol. 103, No. 5, May, 1978).

Wisley

Our last garden stop was the Royal Horticultural Society's Garden, Wisley. About an hour's drive west of London, this garden is used by the R.H.S. for training young gardeners, for displaying garden materials and techniques, and for testing and rating cultivated plants of all sorts. Joe had visited here, too, in 1966 and was curious to see what changes had occurred. While the basic garden was much the same, certain features had been moved and a number of new ones added.

We were particularly impressed with the display gardens recently developed. There are five of these, three of which are model small gardens where plots of the size one might find in city gar-



Clockwise from top left: *Tsuga mertensiana* 'Glauca', an extra-blue form at Hillier's; Wisley—Jean Witt and Mr. Brickell in the trial gardens, model garden for the handicapped, herb garden with paving demonstrations, ponds with water iris; *Gunnera* growing in the Hillier Arboretum with Jean Witt for scale.

dens are planted with fruits and ornamentals. The largest is about 4500 square feet, the smallest about 1800 square feet. One family garden contains areas for vegetables, ornamentals and fruit as well as a play area, while another is for a young couple starting their first garden. A model fruit garden contains such plants as gooseberries, raspberries and espaliered fruit trees. Another garden for the disabled is designed for those who must garden from a wheelchair or are otherwise not able to perform all of the ordinary gardening chores; most beds are raised and there are no steps to hinder wheelchairs. A small greenhouse is also designed with the handicapped in mind. Our favorite was a small herb garden which had just been completed. Its fine collection of herbs is combined with a demonstration of various types of paving stones and walkways. We were impressed also with the use of hedges, walls and fences of several types to separate the garden areas and sections within the gardens.

The trial gardens have been moved since 1966 and are now visible from a nearby highway. Mr. Brickell, the Garden's Director, said that the number of visitors has increased dramatically since this move. This was easy to believe since the trials of asters, marigolds and chrysanthemums were in full flower and made a brilliant splash of color from the highway. While Jean and Mr. Brickell talked *Iris,* Joe spent some time looking at the vegetable trials and at the avenue of *Sorbus × mitchellii,* an entire-leaved *Sorbus* with large dark green foliage, silvery-white beneath, which bisected the trial ground.[2]

The Royal Horticultural Society has a bookstore and novelty shop at the Garden's entrance as well as a plant sales area where one can purchase unusual plants. We noticed that it was very busy with people buying seed.

We spent our too few hours in Wisley (one should schedule at least a full day there) then headed for London. In spite of the Friday afternoon rush-hour traffic, we managed to find our hotel and turn in the car, to our great relief. The next two days were spent at the British Museum and walking through London, before we left for the airport and the return to Seattle.

It is difficult to summarize this trip; we saw too much and not enough—too much because our itinerary included too many gardens, not enough because we didn't do some of them in the depth we would have wished. The conference on endangered plants at Kew was very worthwhile. Contacts made there and at the gardens visited afterward will prove invaluable, as will the ideas and concepts picked up during our three-week stay.

[2]This originated at Westonbirt and was named for a former curator, W.J. Mitchell.

*If your western dogwood (*Cornus nuttallii*) is sick—it is most likely suffering from anthracnose, a leaf-attacking fungus. Now that this disease is established in our area, it probably will persist, though it may not necessarily be fatal to your plants. According to the extension service, the only known measures for control are good sanitation, prompt removal of affected parts and your prayers for a warm dry spring.*

President's Message

For the coming year, I see the challenges as these:

—We must continue to support the Master Plan Update for the UW Arboretum in Washington Park as the Plan moves through the City Council and the University Board of Regents. The EIS was declared to be adequate by the hearing examiner on 17 July 1979. (Highest priorities are for a rebuilt irrigation system, a new Visitor Center and a new maintenance facility.)

—We should offer some Arboretum Foundation funding for the Update Plan's implementation to add to the trust funds already available and earmarked for this purpose. Our donors—past, present and future—will want to see us assist in this great endeavor. This is the year to act.

—We should support the rebuilding of the Teahouse in the Japanese Garden. It is a part of the Update Plan but will be funded largely through a fund drive.

I appreciate the opportunity the membership has given me to assist in the accomplishment of these goals. I ask for your help in these projects so that we will continue to have the outstanding Arboretum that the people of the Seattle area want.

Leroy A. Collins, Jr.

In Memory of—

Often the death of old friends goes relatively unnoticed except by those who loved them. However, when they have left their mark in the community, their passing must be noted not only for the record but also as an expression of thanks for their contribution and respect for their achievements. The plant world has lost three such persons in recent weeks—Edith English, Jacqueline Nehammer and Clare Harris (Mrs. Charles L. Harris), who was Secretary of the Arboretum Foundation from 1946 to 1949.

Edith Hardin English (Mrs. Carl S. English, Jr.) will be remembered as a botanist, plant collector, gardener, writer and teacher. She and her husband were especially drawn to the flora of Mt. Baker and of the Siskiyou mountains in southwest Oregon. For many years she led groups of young people to Deer Park in the Olympics for study of the flora and fauna there. This writer will never forget a day trip to Deer Park with members of an Arboretum unit where Mrs. English pointed out individual plants as old friends and took the time to correct a beginner's mispronunciation: "So you are one of those who will have to learn that the 'n' comes before the 'm' in *Anemone*!"

Jacqueline Nehammer (Mrs. Frantz Nehammer) was a longtime member of the Arboretum Foundation's Board of Directors, although the primary thrust of her activity was with the Washington State Federation of Garden Clubs. She was a nationally renowned judge of flower arrangements and equally talented in the realm of plant combinations. Many Arboretum Foundation members have enjoyed and benefitted from her sensitive, gracious lectures on these subjects. In such demonstrations she always held the plant material as it grew showing, for example, that rhododendrons and camellias are not good bedfellows—the arrangement and texture of their leaves do not complement each other. Mr. and Mrs. Nehammer were excellent musicians—he a cellist and she a pianist. Their estate has been left to the University of Washington to establish scholarships for music and landscape architecture students. How better can their names be perpetuated than this!

Photo: Brian O. Mulligan

Styrax hemsleyanus **photographed from a plant in the Arboretum nursery in early June.**

Leaves From a Collector's Notebook

BRIAN O. MULLIGAN

Styrax hemsleyanus

The genus *Styrax* contains some 160 species most of which come from eastern Asia, especially from China where there are about 40 native species, but extending also into Malaysia. Species also occur in Central and South America, including seven or eight in Mexico which should be tried in warmer areas of the U.S.A.

The Arboretum is currently growing six species, of which the best known are *Styrax japonica* and *S. obassia* from Japan, differing from one another in habit, foliage and inflorescences. Both are now small trees from 15 to 30 feet in height. The latter is taller with large ovate leaves and flowers in long racemes, while the former spreads horizontally in its branch pattern, with smaller leaves and clusters of pendent white flowers like snowdrops.

Another species quite similar to *Styrax obassia* in appearance, foliage and flowering characters is *S. hemsleyanus* Diels. This species, restricted to the northern central provinces of China (Honan, Hupeh and Szechwan), was first found by Dr. Augustine Henry in 1888. E.H. Wilson introduced it to England in 1900 where it first flowered in June, 1909 at the famous Veitch Nursery which sponsored Wilson's first two expeditions to China in 1899 and 1903.

In December, 1960 the Arboretum received seeds of this *Styrax* from Mr. F.J. Williams of Caerhays Castle, Cornwall, where I had seen it during a visit earlier that year. Five years later two plants were set out amongst other members of the same family, *Styracaceae,* near Arboretum Drive East, opposite the head of Rhododendron Glen; one of these is now about eighteen feet high, the other in a more shady situation only about eight feet. The first flowering was noted here in 1970.

The leaves are much more tapered at the base than those of *Styrax obassia,* about four inches long by three inches wide, very finely serrate, stellate-pubescent beneath only on the veins whereas *S. obassia* is covered beneath with a whitish velvety pubescence; in the latter the base of the leaf-stalk encloses the bud, which is not the case in *S. hemsleyanus,* of which the buds are conspicuous and dark brown in color. The sweetly scented flowers are produced in racemes or panicles of six to sixteen flowers each about ⅝ inches long. The calyx is covered with brown stellate hairs, another character distinguishing it from *S. obassia.* So far even the larger plant has been shy to produce fruits, whereas *S. obassia* usually does so each year in varying quantities. Seeds form the best means of propagation, but cuttings

in July under mist would be another method.

Another plant in the same area of the Arboretum growing under the name of *Styrax hemsleyanus* was received as seed from an English nursery in 1948, planted out in November, 1951 and is now about 20 feet. It has flowered and fruited heavily for a number of years and shows evidence in its buds, foliage and flower characteristics of being a hybrid between these two species. It may prove to be more free-flowering and ornamental under our conditions than either of them. Raising seedlings from it might throw more light on its origin.

Prunus maackii (Amur chokecherry)

Amongst trees especially notable for the ornamental character of their bark, some of the birches are no doubt preeminent such as the paper birch (*Betula papyrifera*) of the northern and northeastern states. Several of the cherry family (species of *Prunus*) are also notable in this respect, however, particularly *P. serrula* from west and southwest China, which possesses exceptionally attractive glossy, chestnut-brown bark on trunk and branches. Four specimens, which were planted in 1960 and 1961, are to be seen on the west side of Azalea Way just north of Rhododendron Glen. A young tree is described and illustrated by Dr. C.E. Simons, Jr. in the *Bulletin* for Spring, 1971 (Vol. 34, No. 1, p. 28).

Another decorative species, not as richly colored but still very distinctive in its smooth yellow-brown shining bark, is *Prunus maackii*. A native of northeastern Asia (Manchuria and adjacent U.S.S.R., and Korea), it is, therefore, certainly hardier than *P. serrula* in colder regions. For example, the former can be grown at the Morton Arboretum near Chicago whereas the latter cannot. Donald Wyman, in *Trees for American Gardens,* considers *P. maackii* as "amongst the hardiest of trees," which makes it especially valuable for the eastern halves of Washington and Oregon. Since it is one of the chokecherries, the white flowers are borne in racemes two to three inches long at the same time that young leaves are developing in late April and early May. The oldest and largest tree in the Arboretum is to be found in the grass area just north of the Madison Playfield, an introduction by the U.S.D.A. in April, 1942 (#135617). The main trunk of this is now dead but other younger stems have grown up from its base to a height of 15 or 16 feet. Two others acquired as seedlings in 1958 from Skinner's nursery in Dropmore, Manitoba are growing on or near the north end of Yew Hill between Azalea Way and the Boulevard. Planted in February, 1961, they are now 14 and 18 feet tall, with trunks about 2½ inches in diameter. Since on only one of them has the gray outer bark split and dropped off to reveal the light brown bark beneath, it seems that this feature takes some time to develop.

The photograph of an old tree with several trunks was taken at the Royal Botanic Garden, Hamilton, Ontario, in May, 1978.

Multiple trunks of *Prunus maackii*.

Photo: Brian O. Mulligan

Notes and Comments

We thank Pat Moncini for keeping us up to date with Unit Council activities during the last year. Molly Wolfe, the new education chairman of the Unit Council, has agreed to take her place on the Editorial Board.

Past President Mark C. Collarino has our best wishes for a speedy recovery from the accidental injury suffered earlier this year.

The Naming of Plants—Part II

*ARTHUR R. KRUCKEBERG**

Since the first installment of these notes on plant names in the last number of the *Arboretum Bulletin,* I hope that the reader has continued to encounter Latin botanical names and has asked himself questions about them.

You might have met a binomial like *Townsendia rothrockii* and been perplexed at the lack of information content in such a name. Both the generic name and the specific name are latinized personal names; they tell you nothing about the nature of the plant in question. Or, you may have puzzled over a "jawbreaker" like *Eccremocarpus scaber* and wondered how in the world to pronounce it. To resolve some of these questions, we had better confront plant names analytically. We will take a close look at the kinds of names one encounters in botanical literature, the history of the binomial, and some of the rules of pronunciation and grammar.

Generic Names

What variations on plant names do we encounter all within the framework of the binomial? There are essentially four classes of generic and specific names. In the previous paragraph I used the genus name, *Townsendia.* This example of the commemorative epithet honors a little-known eastern amateur botanist, David Townsend. Kings, rogues, botanists, patrons and lovers, all have been eulogized in this way. The addition of *-ia* to a personal name is a sure route to immortality. Just look at these commemoratives: *Linnaea, Kalmia, Lewisia, Kolkwitzia, Magnolia, Jepsonia, Jeffersonia,* and so on through the floras of the world! *Linnaea,* the delightful trailing twin-flower, is named for Carolus Linnaeus, the father of systematic botany. *Kalmia,* the mountain laurel, is named for one of Linnaeus' students, Peter Kalm. You would be certain to recognize that *Lewisia* is named for Meriwether Lewis of the Lewis and Clark expedition. William Clark is commemorated in the genus *Clarkia,* a delightful group of annuals so common in the spring floras of the Pacific Coast.

A more academic class of generic epithets is the classical descriptive name. Here, Greek or Latin, or sometimes a mismatch of both ancient tongues, are used to depict some characteristic of the genus in question. Thus the genus *Liriodendron* is translated from the classic language as "lily tree"; *Xanthorhiza* means "yellow root"; *Oxydendrum* means "sour tree"; *Cladothamnus* means "branched shrub"; *Enkianthus* means "pregnant flower"; et cetera. Occasionally, generic names have been derived from the original native word. A botanist in the tropics would find that many of the genera he finds there are latinized versions of the original native name. Two examples from the Asiatic flora are *Tsuga,* which is the Japanese name for hemlock, and *Ginkgo,* the Chinese name for that famous and sacred tree of temple gardens.[2] The last category of generic names is both an amusing and intriguing one—the so-called fanciful, poetical, or mythological name. Here are four names which typify this kind of generic epithet. *Dodocatheon* means "twelve gods"; *Theobroma,* the generic name for the cocoa plant, means "god's food"; *Phyllodoce, Calypso* and *Narcissus* are characters in Greek mythology. Now test yourself. Pick up any book which abounds in botanical names and see if you can identify various kinds of generic names just outlined. You should be able to pick out commemorative, classical or latinized native names, and even some of the fanciful names or those that have mythological allusion.

Species Names

Of the four categories of species names, the descriptive and commemorative groups of names are the commonest. Such simple descriptive adjectives as *rubra* ("red"), *nana* ("dwarf"), *repens* ("prostrate growth"), *saxatilis* ("growing in rocks"), et cetera, are ubiquitous examples.

*This is the second of Professor Kruckeberg's two-part article which began in the preceding issue of the *Bulletin.*

[2]For details on the word *Ginkgo* and its origin see Dr. H.L. Li. 1963. *Origin and Cultivation of Shade and Ornamental Trees.* Univ. of Pa. Press, pp. 106-111.

Sometimes the descriptive adjective is compound, as in *angustifolia* ("narrow" and "leaf"), *cordifolia* ("heart-shaped leaf"), *racemiflora* (flowers in a racemose inflorescence). Occasionally, a specific name is taken from the generic name in another group—thus we find the specific name *bignonioides,* which means "like bignonia," or *acerifolia* ("leaves like a maple"). A great many of the more recent specific epithets are simply commemorative, quite like the situation in commemorative generic names. Thus, you would find on any page of Rehder's *Manual of Cultivated Trees and Shrubs* plants with proper names as the specific epithet, such as *thunbergii, wilsonii, kerneri, greyana, forrestii, mildredae.* Parenthetically, I should mention that, whereas in the past commemorative specific names have been capitalized, the current recommendation of the International Rules is to decapitalize both commemorative and place names. It is largely left to the discretion of the user as to whether he capitalizes or decapitalizes such names. The last group consists of species names which indeed are nouns. In the binomials, *Pyrus malus* and *Prunus laurocerasus,* the specific epithets are nouns. Usually such names were formerly generic; thus the species in question which was once placed in another genus now uses the former genus name as a specific epithet.

The inquisitive reader may wonder about the meaning of specific epithets. A number of references can satisfy curiosity on this score. I have before me a book by H.I. Featherly called *The Taxonomic Terminology of Higher Plants.*[3] The latter portion of this book contains a list of common specific epithets and their meanings. Old subscribers to the *Arboretum Bulletin* will recall that for several years a continuing series of lists of such names and their meanings appeared regularly in the *Bulletin.* These lists are particularly fascinating because many of those used almost exclusively in the regal genus *Rhododendron* are transcribed and their meanings given. Another source is the introduction in the first volume of L.H. Bailey's *Cyclopedia of Horticulture.* Part I of the Royal Horticultural Society's *Rhododendron Handbook* (1963) gives the English derivatives for all of the species listed in that volume. The meanings of many generic names can be found towards the end of each generic synopsis in such books as Bailey's *Manual of Cultivated Plants,* Rehder's *Manual of Cultivated Trees and Shrubs,* or, if it is a genus which is quite local in our own flora, the *Flora of the Pacific Northwest,* by Hitchcock and Cronquist is another source. So curiosity can be satisfied, memory aided and information content increased when you delve into meanings of some of the commoner names encountered in horticultural and botanical literature.

Origin of the Binomial

Now for a little history. Somewhere during the course of our high school or college training, most of us were indoctrinated, however fleetingly, with the idea that Latin botanical names and the 18th century Swede, Carolus Linnaeus, are inextricably linked. Indeed, Linnaeus contributed more than anyone else to the codifying, naming and cataloging of the then-known plants of the world. He *is* the father of systematic botany. In 1753, Linnaeus published the all-important work, *Species Plantarum.* This compendium in Latin of all of the known plants of the period serves today as the starting point for botanical nomenclature. Succinct and pithy Latin statements followed the generic name and out in the margin was a single name in italics; at the time this so-called *trivial* name was meant to be a reference or index term for the particular plant in question. The species name of Linnaeus was actually the more lengthy phrase or sentence. I quote such a combination of generic name, the multi-word species name and the trivial epithet from *Species Plantarum:*

"1. *Plantago* foliis ovatis glabris, nudo scapo tereti, spica flosculis imbricatis...*major.*" Here you have the generic name, the compound species name and the trivial name as it appeared in 1753. What has come down to us in the form of the present binomial is the generic name and the trivial name joined together, that is, *Plantago major.* Thus, the birth of the present-day binomial was somewhat of an unexpected, but blessed, event. Linnaeus' intention was to use the generic name with a polynomial specific name; he wanted *his* specific name to serve as a series of descriptive words by which each species was to be differentiated at a glance from all others in the genus. The Linnaean polynomial species name is roughly equivalent to the diagnosis found in present-day botanical works. A diagnosis is a

[3]See Bibliography at end of article.

series of "telescoped" phrases of description, succinctly defining the morphological boundary of the species in question. My only point in dragging you through all of this, though, is to remind you that the binomial—the two words, genus and species—came into being through an accidental coupling of the Linnaean or even pre-Linnaean generic name with the inconspicuous, marginal "trivial" name.

Pronunciation and Grammar

We can do little but skim over the thorny problems of pronunciation and grammar in the forest of botanical names. Strict conformity to the classicist's rules of pronunciation of Latin and Greek names would cause, I am sure, embarrassment among even professional botanists who have used their own or inherited pronunciation for years on end. Europeans tend to pronounce Latin binomials largely as they would have pronounced the Latin that they learned in school. This is not so in the New World. Pronunciation seems to be inherited from teacher to pupil and I can offer no great solace to those who are looking for pat rules to pronunciation. Some taxonomic works, like Jepson's *Flora of California,* show accent marks on generic and specific names. This, of course, is a big help. There is usually little difficulty in dealing with the pronunciation of commemorative names; one simply pronounces the name of the man and adds (in the case of a generic name) *-ia,* or in the case of a specific name the *-ii* or single *i.* Thus, one would say *Jónesii,* rather than *Jonésii.* In all other names of Latin or Greek origin, the coward's way out is to pronounce each syllable and hope that the next to the last syllable is the one to accent. There does remain one rather exceptional suffix to specific names, the one called "unlucky" by Dr. C.B. Bradley in his quaint note on accentuation of Latin names given in Jepson's *Flora.* The suffix *-oides* is generally mispronounced as though one were saying such words as ovoid, thyroid and mastoid. "All such tabloids," says Dr. Bradley, "are of modern manufacture and suited to the haste and impatience of our modern life; but '-oides' is a leisurely and dignified mouth-filling trisyllable and has been such at least ever since the Trojan war."[4] The grammatical rules for binomials apply particularly to the specific epithet. Since these are largely adjectives they must agree grammatically with the generic name. The generic name is always singular in number and either masculine, feminine or neuter. What follows is a sampling of such specific epithets with three case endings.

Masculine	*Feminine*	*Neuter*	*Meaning*
albus	alba	album	white
niger	nigra	nigrum	black
viridis	viridis	viride	green
acer	acris	acre	acid, sharp
japonicus	japonica	japonicum	Japanese
vulgaris	vulgaris	vulgare	common

Commemorative names take the possessive case and thus end in *-i* or *-ii,* regardless of the gender of the generic name—if the person honored is a man. Here are some examples: *baileyi,* one *i; nuttallii,* two *i's; jonesii,* two *i's.* Thus, in most cases such specific epithets of commemorative type end in double *i.* A rather rare exception is when the commemorative word ends in *-ey* or *-er;* it is then followed by a single *i*—thus *baileyi, kerneri* and *rehderi.* If the honorific refers to a woman, then the proper ending is always *-ae,* as in *edithae, margeritae, mildredae,* et cetera. Here is a cute variation on this immediate theme: If two or more persons are being honored, as two brothers or a man and wife, the ending would be *-orum,* the plural possessive, as in *davisiorum.* Gender for generic names varies depending upon the nature of the name; thus, most commemorative genera, such as *Magnolia, Kernera, Jepsonia, Grayia,* end in *-a* and are usually feminine. Generic names ending in *-um* are neuter, and those ending in *-us* are usually masculine. A rather odd exception is that for many trees the generic name, although ending in *-us*, is considered feminine and therefore would take a correspondingly feminine form of the specific name: Thus *Quercus alba,* rather than *Q. albus;* or *Pinus monticola,* not *P. monticolus.*

Sometimes the ending gives a clue to the meaning that is intended by the specific epithet. Thus, if the epithet is derived from a geographical name, it is usually adjectival and takes the ending *-ensis, -anus, -inus: Besseya wyomingensis, Iris virginiana, Rubus columbianus,* and *Acer pensylvanicum.* Habitat preference of plants is often indicated by the suffix *-icola,* as in *rupicola* or *saxicola,* and *silvicola*—meaning, respectively, "living in the rocks," and "living in the forest." Now is the time to remind my reader that meanings and grammatical equivalents can best be attained by

[4]See also Reginald Farrer. 1914. *English Rock Garden,* Vol. 1, Introduction, xxiii.

examining some of the source books mentioned at the end of this article.

It is hoped by now that the justification for the binomial, its usages, its pronunciations, its grammatical procedures, et cetera, are at least incipiently understood by the reader. It should also be apparent, especially if you were to scan a list of binomials in a catalog or a floristic list or a manual of systematic botany that the information content of these binomials is rather minimal. They don't reveal much about the plant they name. But the same gap exists in everyday communication: most names in any language mean very little by themselves but take on meaning when associated with an object. That this is true of botanical nomenclature will become even more apparent when we chuckle over some quaint botanical anagrams. Some practitioners of the art of nomenclature have resorted to twists and inversions of established generic names in order to manufacture more generic names with minimum effort. A good example is the lily family: the old established name of *Allium* (for all onion species) was borrowed to name a closely related group of plants in the California flora; the taxonomist, lacking a generic name, turned *Allium* around to make *Muilla* the generic name for this related group. Here are some more examples of this droll practice: The name of Edwin Palmer is used anagrammatically in the generic name now *Malperia; Psoralea* becomes *Parosela; Filago* becomes *Gifola; Inula* becomes *Luina; Onagra* becomes *Angora; Mitella* becomes *Tellima; Asarum* becomes *Saruma;* there are two anagrams for the genus *Liatris—Trilisa* and *Litrisa.* Cheap erudition to get two names for the price of one! Yet these bits of nonsense are indeed part of the accepted and official lists of generic names.

Nomenclature Changes

When a Latin name of a familiar plant is scuttled in favor of another, users of the old name become irate. Several such vexing changes are known to foresters, botanists and gardeners for plants of our Northwest flora. The particular instances are nicely summarized by Prof. Kenton Chambers of Oregon State University:[5]

"A perennial source of headaches are changes in the Latin names of familiar plant species. It upset foresters greatly when, in the 1920's, taxonomists substituted *Pseudotsuga menziesii* for the then-familiar name *Pseudotsuga taxifolia.* We long ago learned to live with this change, but every few years other upsets occur. Recently it was found, for example, that *Osmaronia* is not the correct name for Indian-plum, and *Oemleria* has had to be substituted. *Libocedrus* (incense-cedar) is called *Calocedrus* by some botanists; and *Castanopsis* (chinquapin) may be better named *Chrysolepis.* Basically there are three reasons for such name changes: 1) because earlier errors must be corrected; 2) because there is disagreement on where a plant fits in the classification scheme; and 3) because taxonomists differ on how inclusive particular names should be.

"In case 1) there is no choice but to accept the changed name. *Oemleria* is correct because it was published many years earlier than *Osmaronia* and was simply overlooked by American botanists. In case 2) we have a choice. Different names can be correct depending on your view of relationships. This happens in the well known case of *Mahonia* versus *Berberis* as names for the Oregon-grape. If you believe the mahonias are not closely enough related to barberries to be included with them, then you can correctly use the former name. In case 3), above, there is also a choice. This is a matter of opinion whether one 'splits' or 'lumps' various species. For example, the name *Trillium chloropetalum* was long used for nearly all the sessile-flowered West Coast trilliums. However, in a careful study done by Dr. James Freeman in 1975, it was argued that several different species actually exist in this region. Consequently, our Willamette Valley white-flowered type was given the name *Trillium albiflorum* (and in addition, the purple-petaled type of the southwest Oregon Coast was named *Trillium Kurabayashii* by Freeman). The epithet *chloropetalum* now applies only to certain plants of central California."

Code for Cultivated Plants

There is no real need to go into the intricacies and vagaries of the *International Code of Botanical Nomenclature.* This is largely the preserve of the expert and need not bother us

[5]Chambers, K. March, 1979. Names. Native Pl. Soc.-Ore. (newsletter). 13(3):4.

here. However, a similar code for cultivated plants is of practical concern to us. The 1961 edition of the *Code for Cultivated Plants,* formulated at a meeting in Cambridge, England, makes early reference to the *International Code of Botanical Nomenclature.* It says "this code, the *International Code of Botanical Nomenclature* ('Botanical Code') governs the use of botanical names in Latin form for both cultivated and wild plants." Whereas the Botanical Code encompasses the entire hierarchy of the taxonomic system, the *Code for Cultivated Plants* works only at three lower levels—the genus, species, and cultivar or variety. Article 3 states: "the aim of the present code is to promote uniformity, accuracy, and fixity in the naming of the agricultural, silvicultural and horticultural cultivars (varieties) which are normally given fancy names such as apple 'Cox's Orange Pippin', barley 'Balder', *Juglans regia* 'King' and rose 'Peace'. The common names of genera and species, such as beech for *Fagus,* potato for *Solanum tuberosum,* hollyhock for *Althaea rosea,* and rye for *Secale* are not regulated by this code." Article 5 states that "The term 'cultivar', abbreviated 'cv', denotes an assemblage of cultivated individuals which is distinguished by any characters (morphological, physiological, cytological, chemical, or other) significant for the purposes of agriculture, forestry, or horticulture and which when reproduced sexually or asexually retains its distinguishing features." Perhaps the most useful and important innovation in the nomenclature of cultivated plants is the term *cultivar.* The Cultivated Plant Code states in essence that the cultivar is an international term for the category known in various languages as "variety" in English, "varieté" in French, "variedad" in Spanish, "Sorte" in German, et cetera. The cultivar or varietal name follows the Latin binomial, as in *Syringa vulgaris* 'Decaisne'. There are several kinds of recognized cultivars. The clone is a cultivar consisting of a genetically uniform assemblage of individuals, derived originally from a single individual by vegetative propagation. A line, however, is a type of cultivar which is derived from sexually reproducing individuals, but these individuals maintain uniform appearance through seed or spore propagation. The rules of the formation and use of cultivar names are rather generous and wide in scope. The name is markedly different, usually, from the botanical name in Latin form. As far as I can tell, there is no restriction as to the language from which a cultivar name may be derived. One insistent rule is that the cultivar name be surrounded by single quotes. Occasionally, the cultivar name may be latinized; however, it still requires quotes. For example, *Lilium maculatum* 'Sanguineum'; *Calluna vulgaris* 'Carnea'. The code for cultivated plants puts considerable emphasis on the need for registration of cultivar names. It sets up a procedure and prescribes the rules for registration. For the professional horticulturist, the *International Code of Nomenclature for Cultivated Plants* is an important regulatory reference.

I close these sketchy notes on plant names with a word of counsel and encouragement. You should eye a Latin name boldly, pronounce it without hesitation, and learn to use it according to the few simple rules that are now available to you. Your skill in their use will increase immeasurably once you begin using them. During your apprenticeship you would do well to look at some of the source books listed below.

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ERRATUM: Photos credited to H. L. Parker in the summer *Bulletin* (pp. 3, 5 and 7) should have read E. A. Parker.

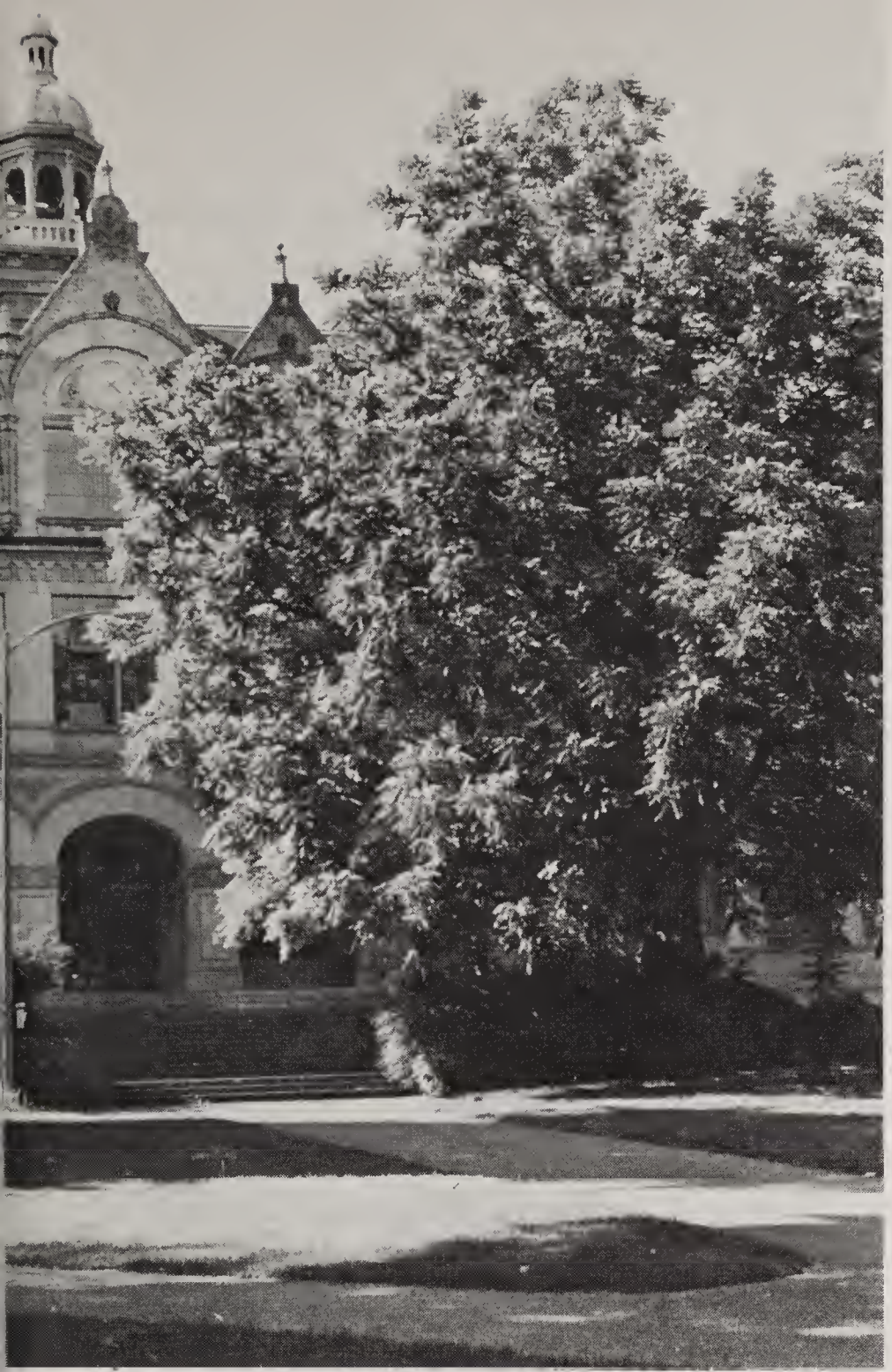


Photo: J. Pirzio-Biroli

Enormous black walnut in front of Denny Hall.

Some Notable Campus Trees

*C. FRANK BROCKMAN**

The campus of the University of Washington, favored by the mild, humid climate of the Puget Sound region, is noteworthy for the abundance and variety of its trees. Included are approximately 200 species, representatives of most temperate regions of the world. With shrubs and other vegetation they enhance the interest and beauty of the 364-acre campus bordering the Lake Washington Ship Canal and Union Bay. They serve an important educational function for students of botany, forestry and landscape architecture, for whom the campus is a veritable outdoor laboratory. A number of specific trees have unique interest or embody historical associations related to early faculty members or significant past events on campus.

Since 1895, when the campus was transferred to the present location from what is now downtown Seattle, the interest and beauty of the campus and its relation to scenic values of the region have always enjoyed high priority. Attention to planning and maintenance have favored the campus landscape, enhancing the lines of numerous structures and framing views of lake and mountains. The scenic backdrop of the campus is highlighted by the huge, glacier-clad cone of Mount Rainier, some 50 miles to the south.

Edmond S. Meany (1862-1935), professor of history, was responsible for the first tree plantings on campus. He envisaged the University grounds as an arboretum and, in addition to primary duties, taught early forestry courses and conducted a seed-exchange program with similarly interested individuals and organizations. He and his students planted and carefully nurtured seeds so acquired in a nursery located at his home near the University; the resultant seedlings were transplanted to various places on the new campus. Unfortunately, since no record exists, positive identification of these original plantings is hear-

*We welcome a new article by C. Frank Brockman, Professor Emeritus of the UW's College of Forest Resources. In 1952, when still a member of the *Arboretum Bulletin's* Editorial Board, he began a series of notes on northwest native trees that continued until 1967. He is also the author of *A Flora of Mt. Rainier National Park* (published by the National Park Service in 1947 and unfortunately out of print) and of *Trees of North America* (a Golden Field Guide).

Branches of monkey puzzle tree near Denny Hall. Photo: J. Pirzio-Biroli

say. Some have been removed as campus development progressed; for many others the relationship to Meany's early efforts has been lost. However, one specimen, the giant sequoia (*Sequoiadendron giganteum*) near the northeast corner of Smith Hall, is considered to be one of "Meany's trees." In addition, since Meany's initial tree-planting activities were undoubtedly confined to the northern extremity of the present campus, where earliest developments occurred, one might surmise that his efforts were responsible for the larger trees most unique to the Pacific Northwest which are found about Denny Hall,

***Sassafras albidum* southwest of Denny Hall.**

Photo: G. Pirzio-Biroli

oldest building on campus, as well as in certain nearby locations.

Just north of the giant sequoia noted above, near the southeast corner of Miller Hall, is a Spanish fir (*Abies pinsapo*). It may be recognized by its short, stiff, plump needles which extend in all directions from the branches. Also, in late summer or fall, elongated, purple cones may be noted standing erect upon topmost branches.

Near 15th Avenue NE, opposite Eagelson Hall, is a large sugar pine (*Pinus lambertiana*), a native tree of California and Oregon. It is distinctive for its long, columnar cones which may occasionally be observed hanging from near the ends of the upper branches. Cones of sugar pine are the longest of any pine, averaging about 16 inches, though cones up to 26 inches are occasionally produced by trees growing under best conditions within their natural range. Nearby, in the grassy expanse south of the large parking area at the northwest corner of the campus, is a large shingle oak (*Quercus imbricaria*), a native tree of the Ohio and Mississippi valleys. Since its four- to six-inch leaves are not lobed as is typical of many oaks, but have smooth, wavy and slightly curled margins, it may not be recognized immediately as an oak. However, pendent tassel-like clusters of staminate flowers in spring, acorns by late summer or fall, or a cluster of buds at the tips of leafless twigs in winter are indications of the true identity of this tree.

Most conspicuous, perhaps, of some very interesting old trees found in the immediate vicinity of venerable Denny Hall are several specimens of monkey puzzle (*Araucaria araucana*), a native of Chile. These dioecious trees are easily recognized by their whorls of branches covered with stiff, leathery, sharp-pointed scale-like foliage. Large oval cones, five to eight inches long, may be seen on upper branches of the female tree; at first green, they eventually turn brown and disintegrate at maturity.

The Denny Hall area also has one of the largest black walnuts (*Juglans nigra*) on campus. This species is distinguished by its long, pinnately compound leaves, the largest leaflets being near the center of the leaf; by its pendent, unbranched catkins of staminate flowers in spring; and in fall by walnuts enclosed in greenish husks that do not split open when ripe. Behind Denny Hall is a large bur oak (*Quercus macrocarpa*), notable for its large leaves with rounded lobes incised almost to

Photo: J. Pirzio-Biroli

Right: Top of the monkey puzzle tree showing young cones. Below: *Sequoiadendron,* one of Meany's trees, near Smith Hall.

the midrib just below the middle. The distinctive oval acorns with their deep, fringed cup appear in autumn. A fine specimen of sassafras (*Sassafras albidum*), readily identified by its variable leaves that turn yellow in autumn, grows near the walkway southwest of Denny Hall. Leaves of this tree may be oval, lobed like a mitten or divided into three lobes.

North of Denny Hall, just beyond the small parking area, is a large red oak (*Quercus rubra*), one of several trees of this species on campus. Its leaves, which turn red in fall, have toothed and pointed lobes; its ovoid acorns have a saucer-like cup at the base; and, as in all oaks, slender pendent catkins of staminate flowers hang from near branch ends in spring; also several buds are clustered at the tips of the branches.

The weeping willow (*Salix babylonica*) found in the grassy triangle bordered by NE Pacific Street and Pacific Place NE owes its presence to the vigilance of Professor Meany. About 1920 a slip from a weeping willow taken from Napoleon's original tomb on the island of St. Helena was planted adjacent to a small stream which, at that time, meandered through this area near the original buildings of the College of Fisheries. By 1930 this willow had increased in size and had become a nuisance to fisheries activities by shedding its leaves upon the surface of fisheries ponds. Its planned removal was prevented by Meany's vigorous defense of its historic significance. Today, with that early stream obliterated and the College of Fisheries housed in modern facilities adjacent to the Lake Washington Ship Canal, the "Napoleon Willow" survives as a memento of an earlier time.

Photo: G. Pirzio-Biroli

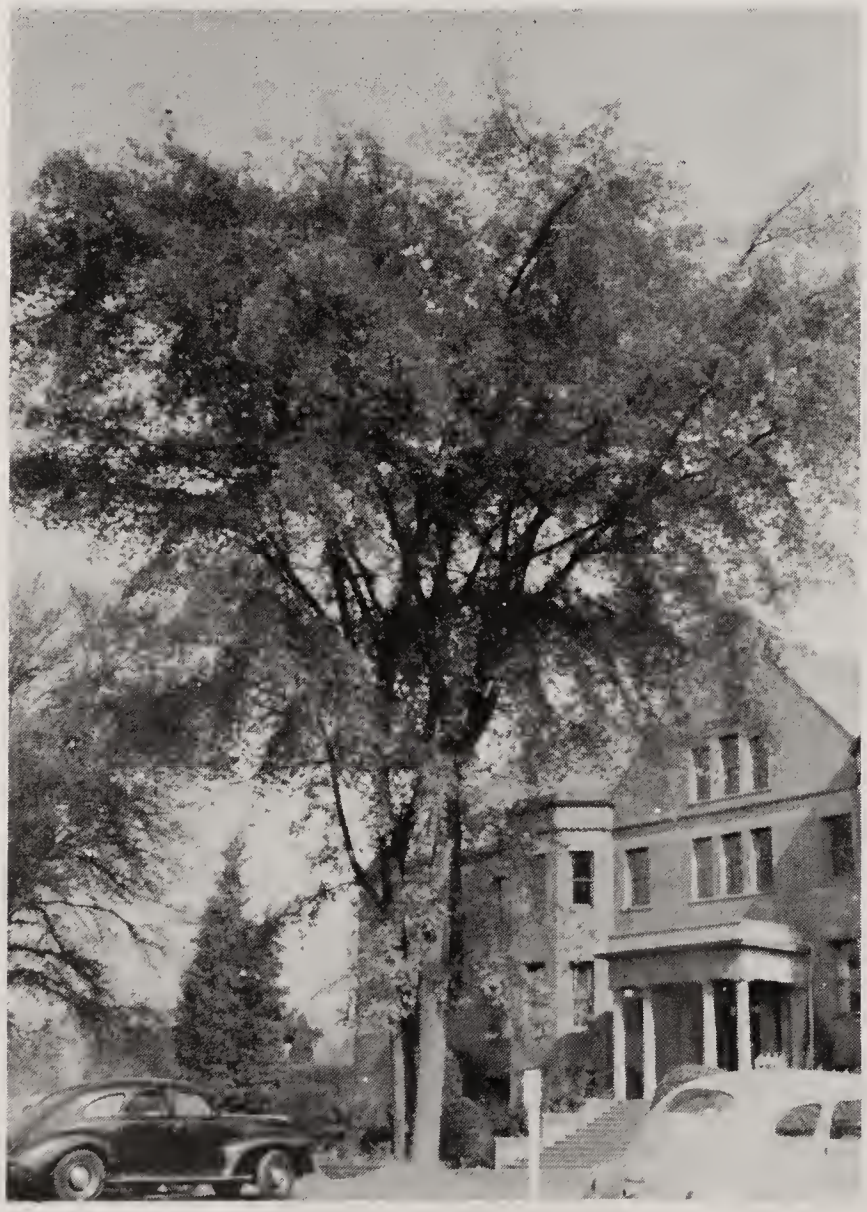
Photo: G. Pirzio-Biroli

Branch of the bur oak (*Quercus macrocarpa*).

Several species of elm are found on campus. Of particular interest to students and faculty of the College of Forest Resources is the "Miller Elm" just south of the Student Union Building. A slippery elm (*Ulmus rubra*), it was planted in honor of Francis G. Miller who served as the first dean of the college from 1907 to 1912.

The American elm (*Ulmus americana*), between Clark Hall and the Communications Building, has a noteworthy historical background. In 1902 the University secured a scion from the venerable elm at Cambridge, Massachusetts, under which George Washington took command of the Continental Army in 1775. Planted in front of Lewis Hall by Professor Meany, it eventually became a handsome specimen of considerable diameter and height with the vase-shaped form typical of this species. For years it was a noteworthy campus landmark, widely recognized as a "son" of the historic original Washington Elm at Cambridge. Unfortunately, that tree in Cambridge was destroyed by storm in 1923; it was replaced by a scion from the "Washington Elm" on the University campus. Subsequently, in 1963, the University's elm was severely damaged by lightning and three years later, after efforts to save it had failed, it was removed. The present "Washington Elm" on campus has grown from a scion taken from the initial "Washington Elm" of the U.W. Campus before that famous tree was damaged and later removed.[1] It is thus a direct descendant of the original Washington Elm related historically to George Washington.

The original "Washington Elm" in front of Lewis Hall. Photographed in 1952 by the author.



Two English hollies (*Ilex aquifolium*) flanking the entrance of the Art Building along Stevens Way were grown from seeds collected from hollies at Mount Vernon, historic home of George and Martha Washington. They were planted in 1930, gifts from Frances J. Trumbull.

The small sycamore or plane tree (*Plantanus* sp.), found near the previously mentioned "Napoleon Willow," has particular interest to students and faculty of the nearby School of Medicine. It was planted in 1975, a gift of Dr. Eugene Goforth, a Seattle psychiatrist, in honor of the ancient Greek physician, Hippocrates, who is said to have taught under a great plane tree that still grows on the island of Cos.

Also of historic importance are the 58 sycamores along Memorial Way inside the 45th Street entrance of the campus. They were planted about 1920 to memorialize the 57 men and one woman from the University of Washington who lost their lives in World War I; their names appear on plaques attached to the pylons flanking the campus entrance. Characteristics of these trees more

[1]*Arboretum Bulletin,* Spring, 1967, XXX(1):10

nearly resemble those of the American sycamore (*Platanus occidentalis*); the leaves, four to eight inches across, have three to five shallow, toothed lobes and the globular heads of tiny, elongate seeds—which disintegrate at maturity—are borne singly on long, slender stems. However, the mottled, scaly bark has the darker color more like that of the London plane (*Platanus* × *acerifolia*).

Two international groves of trees, containing species indigenous to foreign lands, also add interest to the campus. Oldest of these groves, located south of Smith Hall, dates from Washington's birthday in 1932 when 29 foreign consuls gathered there to participate in a tree-planting ceremony. Noteworthy in this grove are an Italian cypress (*Cupressus sempervirens*) and a European larch (*Larix decidua*). The other grove was planted on Campus Parkway at an impressive ceremony during the Fifth World Forestry Conference held on campus in 1960.[2] Representatives of 64 nations participated. Included among species planted at that time are: *Pinus patula* from Mexico; European beech (*Fagus sylvatica*) and European hop-hornbeam (*Ostrya carpinifolia*) together with other European species also found elsewhere on campus; several species of false beech (*Nothofagus*) from Chile and New Zealand; several species of *Eucalyptus* from Australia; a number of Oriental species, including the paper mulberry (*Broussonetia papyrifera*) and China fir (*Cunninghamia lanceolata*); and a Lebanon cedar (*Cedrus libani*) from the Near East.

The dawn redwood (*Metasequoia glyptostroboides*) growing near the walkway between Sieg and Guggenheim Halls is a very fine specimen of this species. *Metasequoia,* a deciduous member of the redwood family, has small ovoid cones and opposite branchlets. This species is often referred to as a "living fossil," for until 1941 it was known only through fossil records and considered to be extinct. At that time, however, living specimens were discovered in a remote valley of interior China and today their unique interest often prompts their use in landscape plantings. The unexpected discovery of living specimens of *Metasequoia* might be considered the equivalent, in a botanical sense, of suddenly coming face to face with a dinosaur.

Another "living fossil" among trees is the maidenhair tree (*Ginkgo biloba*). Fine specimens grow near the northeast corner of the Mechanical Engineering Building and south of Guggenheim Hall. This species is the only survivor of a larger number of that genus which flourished in various parts of the world during prehistoric time. Although distantly related to conifers, it is radically different in several respects. The leaves, which turn yellow in fall, are deciduous and fan-shaped, resembling maidenhair fern, which accounts for its common name.

The foregoing is but a brief outline of a few noteworthy trees on the campus of the University of Washington. Walks about that picturesque area will reveal many others of interest because of such features as floral beauty in spring, brilliant hues of fall foliage, their association with early botanical explorers as expressed in both common and scientific names, or their importance to both primitive and modern peoples through the varied needs that they served.

For other trees on UW campus see following pages and article, "Planting for Posterity," on page 22.

Quercus macrocarpa behind Denny Hall.

Photo: G. Pirzio-Biroli

[2]*Arboretum Bulletin,* Winter, 1960, XXIII(4):133 and Henry Schmitz, 1973, *The Long Road Travelled,* pp. 262-8 (includes list of species planted).

Clockwise from upper left: Close-ups of the "mitten tree" (*Sassafras albidum*) and of the paper mulberry (*Broussonetia papyrifera*); a view of the international grove on Campus Parkway with the *Broussonetia* in the center; path through this planting (showing marker at base of tree); the Miller Elm at the southwest corner of the Student Union Building. Photos: G. Pirzio-Biroli

Drawing: Patricia Gutter

Deciduous trees create a ceiling in the area between Suzzallo Library and Thomson Hall.

Planting for Posterity—
Trees and Shrubs on the University of Washington Campus

*PATRICIA GUTTER**

When a new building is required on the University of Washington campus, it is planned with the idea that it will last for several decades. Similarly, when landscape changes are proposed they are also considered in terms of the future.

On the University of Washington campus one of the major objectives in the selection of plant materials is to include plants that have the potential of becoming part of the University's legacy to future generations. Thus, in the selection of plant materials, duration or longevity becomes an essential factor. Other factors requiring careful consideration in regard to adding or removing plants from the campus include the functional, educational, historical, aesthetic and psychological aspects of the plantings. The degree to which one of these factors predominates over another depends on the scale of the project, the character of the adjacent area and the site conditions at the given portion of the campus.

I will now discuss these various factors in more detail and indicate where examples may be seen on campus. A University map will prove very helpful in locating the areas mentioned.

Functional factors

Perhaps the most neglected, yet in many ways the most obvious aspect for making plant choices is that of the function they are to serve. This is referred to as the design intent. The more permanent the project, the greater the attention need be given this aspect of plant selection. Form, habit of growth, plant texture and the use of evergreen vs.

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deciduous material are key factors at this stage of the selection process.

On the University of Washington campus it is possible to observe plants being utilized to nearly the fullest range of their design potential. The most casual observer will be able to find numerous examples in which shrubs have been used architecturally to create walls, screens and barriers, while large (frequently deciduous) trees are used to form ceilings, and floors are simulated by the use of ground covers. Absent, however, are examples of pleaching, pollarding or espalier.

It is within the context of functional factors that plant materials are utilized to protect difficult slopes, to provide shelter from inclement weather or as elements to modify shade and shadow patterns. Several of these examples may be seen in the portion of campus along 15th Avenue NE between Gate 5 and the Henry Art Gallery (see campus map).

As one observes the plants that have been used functionally, it becomes apparent there is somewhat of a tendency on the part of designers to use very common plant materials. Walls of moderate height, five to ten feet, are frequently created through the use of cherry or Portugal laurel (*Prunus laurocerasus* or *Prunus lusitanica*). Other materials frequently selected are *Photinia glabra, Aucuba japonica,* and some of the more common *Viburnum*s. While there are not as many taller plant walls to be seen on the campus the few that do exist are frequently formed by planting *Thuja occidentalis* fairly close on center.

Shrub barriers have become much more common on the campus in the last few years. The plant materials often selected to serve this function are the barberries: *Berberis darwinii, B. julianae* and *B. thunbergii* 'Atropurpurea' for its color effect. *Pyracantha coccinea* can also be seen in several locations functioning as a shrub barrier. The planting along 15th Avenue NE makes use of both *Berberis* and *Pyracantha*. The more commonly used deciduous trees in the creation of ceilings on campus are the maples: *Acer macrophyllum, A. platanoides* and *A. p.* 'Crimson King'. An example of this last variety used in conjunction with a *Liriodendron tulipifera* and several other large deciduous trees to create a ceiling may be seen in the path area between Suzzallo Library and Thomson Hall.

Much has been written about the use of plants for their functional value. The interested reader should have little difficulty obtaining useful and informative materials on the subject. I suggest the writing of Gary O. Robinette as a good place to begin.

Educational factors

Just as the buildings and classrooms serve as sanctums for those involved in the pursuit of higher learning on the University of Washington campus, so the grounds function as a veritable laboratory for students who desire to increase their knowledge of the botanical and horticultural sciences.

For students in Landscape Architecture, the campus offers the opportunity to make visual comparisons between species as well as cultivated varieties. Equally important is the opportunity landscape students have to explore the variation occurring within a given species because of varying environmental conditions, cultural practices and growth factors.

Observing a *Nothofagus dombeyi* or a *Sequoiadendron giganteum* (one of the world's tallest trees) in a five gallon container at a local nursery can in no way be compared to the opportunity of seeing these same species on the cam-

Young *Eucalyptus* with other trees near Bloedel Hall in the Forestry courtyard. Photo: Brian O. Mulligan

Nothofagus dombeyi **planted on the lower level of Meany Hall. Drawing: Patricia Gutter**

pus at various stages of growth. As an example, the reader is urged to compare the *Sequoiadendron giganteum*s growing in the lawn area between Suzzallo Library and Gowen Hall with the same species planted in the S.E. corner of the Drug Garden. The sequoias near Suzzallo are approximately 25 feet tall as compared to the specimen in the Drug Garden which has achieved a height of over 60 feet, with the ultimate potential of reaching 325 feet.

An equally noteworthy tree on campus is the handsome specimen of *Nothofagus dombeyi* planted on the lower level of Meany Hall across from the N.W. side of the Administration Building. The magnificence of this particular specimen should only increase as the tree reaches full maturity. The unusual siting of the tree seems to add to its interest and the reader should not miss the opportunity to see it.

The two final areas I suggest the reader visit are: (1) the Forestry courtyard, which is located between Winkenwerder, Anderson and Bloedel Halls; and (2) the Drug Plant Garden. I include these areas not because of their preponderance of long-lived trees but because of the unique educational aspects of each. An attempt has been made in the Forestry courtyard to experiment with several tree species considered tender in this area; included are a number of *Eucalyptus* varieties. Some of the materials were severely injured this past winter; notwithstanding, the area still serves as an example of the research aspect of planting for posterity. Although the Drug Plant Garden has been included because it is an educational facility, within the Garden there are a number of trees, including the *Sequoiadendron giganteum* mentioned previously, having a projected life expectancy of 100 years or more. While in the Garden, the reader should take note of the *Lagerstroemia indica* planted near the path in the central part of the Garden. This is the only specimen of *L. indica* I have seen on the campus.

Historical factors

Every campus is complete with its memorial fountains, works of art and even its historic buildings. More significant in many respects, however, are the commemorative or historic trees that may be present. Of the many ways one generation can attempt to bequeath something of value to another, few are as significant as the legacy of historic trees. The University of Washington is fortunate in having a number of such trees throughout the campus. I commend Professor Frank Brockman (Professor Emeritus) for his work in locating and cataloging the majority of these trees and refer the reader to his article in this issue of the *Arboretum Bulletin*.

Aesthetic factors

In the mid-60's beautification programs were the vogue. By the early 70's general public awareness had evolved to include ecological concerns. Aesthetics have had their place in both these movements and indeed should never be omitted from the planning process. Aesthetic values remain fairly consistent and generally that which is considered beautiful by one generation will continue to be appreciated by subsequent generations. Occasionally, however, buildings and even plants fall out of fashion. The *Araucaria araucana* located near Savery Hall in the north lawn area was once considered a very desirable tree. Today's students consider it quite an oddity with very little aesthetic appeal.

When using aesthetics as a major factor in designing, one may approach the task with the eye of the artist, the naturalist, or one may take a more abstract approach by combining elements of both. In designing with the eye of the artist, flower and foliage color as well as form become the dominant elements in plant selection. To de-

sign with the eye of the naturalist places a greater emphasis on combining plant materials that grow in natural association by utilizing form, texture, and color combinations occurring in nature.

Although examples of both approaches may be detected throughout the campus, frequently the most celebrated aesthetic plantings consist of but a single specimen silhouetted against a building facade. Such is the case with the *Styrax japonica* planted on the N.W. corner of Anderson Hall near Stevens Way. Of equal beauty in the late fall and early winter is the row of *Crataegus* species planted in front of the Drug Garden along Stevens Way. While still in the area the reader should take note of the specimen of *Fagus sylvatica* 'Atropurpurea' growing near Anderson Hall closer to the building and almost directly behind the *Styrax*.

Psychological factors

Psychological and aesthetic factors are similar in that they both affect emotional response. Psychological factors, however, are usually accompanied by changes in physical behavior which are in direct response to the environment. This may be as simple as the desire to stop in a wooded area and sit for a while, or as involved as entering a spontaneous sports game with a group of strangers in an open lawn area. The phenomenon is referred to as the psychological effect of plant materials on human behavior. Research on the subject is of comparatively recent origin and little of what has been produced today will hold up under scientific scrutiny. The difficulty is not in proving that the phenomenon actually occurs, but rather how to collect and record data on the subject accurately. For the reader interested in pursuing the topic, I suggest the published works of Steve and Rachel Kaplan, research psychologists, at the University of Michigan.

Those interested in experiencing the effect plants can have on the human psyche may do so very easily by comparing various plantings on campus. I suggest a comparison between the Sylvan Theater and the walk along Island Lane (see campus map). The areas are very close in terms of proximity but extremely diverse in terms of their landscape character.

I will not attempt to describe the areas in detail but will leave that for your discovery. You will find the Island Lane planting more naturalistic in character than the Sylvan Theater, which appears orderly or formal by comparison. While one may

The Sylvan Theater. **Photo: G. Pirzio-Biroli**

be content to walk along Island Lane as if on a forest trail, the Sylvan Theater invites you to stop, relax and enjoy the serenity of the setting. I suggest that the reader pay special attention to the trees in the area of Sylvan Theater. Among the many handsome specimen trees are two *Catalpa speciosas*, a lovely *Aesculus hippocastanum* and several *Ulmus* species destined to become part of the campus' legacy for several generations.

Planting for posterity

If you are working with a large estate it should not be difficult to select and incorporate plant

Island Lane. **Photo: G. Pirzio-Biroli**

materials on the basis of functional, aesthetic, psychological, educational and even historical factors. If the property in question happens to be a small city garden the task will prove much more difficult, if indeed possible. Nevertheless, it is possible to create a landscape setting that will remain a source of satisfaction and beauty through several generations.

The most important thing is to make proper plant selections initially. Inappropriate choices lead to the need for excessive pruning or the removal of the materials altogether. If one of your design goals is to plant for posterity, mistakes such as this must be avoided.

While there is no substitute for sound knowledge of plant materials, with patience and astute observation even the beginning gardener need not err in making appropriate plant choices. A good rule for the amateur and even the more knowledgeable gardener is to "see before you plant." Toward this end, the University of Washington campus should prove an invaluable resource for all those with an eye to see and the patience and desire to avoid costly mistakes.

REFERENCES

Kaplan, S., and R. Kaplan. 1977. The experience of the environment. *In* Aristide H. Esser (Ed.). Man-Environment Systems 7(1):300-305. Association for the Study of Man-Environment Systems, Inc.

Robinette, Gary O. 1972. Plants, People, and Their Environmental Quality. U.S. Dept. of Interior and the National Park Service, in cooperation with the American Society of Landscape Architects. U.S. Government Printing Office.

Photo: Jean Henderson

Mary Ellen Mulder, new Unit Council Chairman, selling bulbs at the 1978 sale.

9th Annual Arboretum Foundation Fall Bulb Sale
Tuesday and Wednesday, October 2nd and 3rd
From 10 AM to 4 PM
Arboretum Office Parking Lot

One list will be mailed in mid-September this year.
Bulbs will be available only on the days of the sale.

No Pre-Orders

This public sale features the largest selection of unusual bulbs
—native and exotic—
anywhere in the Pacific Northwest.

ARBORETUM ANNUAL REPORT

June 1, 1978—May 31, 1979

JOSEPH A. WITT
Curator of Plant Collections

Treading water might be the best way of characterizing the history of the Arboretum for the last year. It was neither sinking nor making much evident progress toward its goals. However, two major events are pending which will have a profound effect on the Arboretum's future. These are, of course, the Master Plan Update for the Arboretum in Washington Park and the renewed search for an Arboretum Director.

The Updated Master Plan is, at this writing, still awaiting acceptance by the Seattle City Council and the Regents of the University. The final Environmental Impact Statement has been finished and the next step is up to the City.

This does not mean, however, that planning for the future is completely stopped. The Arboretum and Botanic Garden Committee is establishing a list of priorities for various projects in the Arboretum in Washington Park. This must be done in order to develop a rational scheme for expending Trust Fund and other moneys in a manner that will most benefit the Arboretum and its users. It is premature to predict what these priorities may be, but it seems safe to assume that replacement of the rapidly decaying irrigation system with a modern labor-saving and efficient one will be high on the list.

The search for a Director reached a climax in May when two fine candidates were brought to Seattle for interviews and introduction to the Arboretum's programs and potentials. There has been no announcement of a decision from the University Administration as of May 31st.

The Union Bay Teaching and Research Arboretum is stalled because of a number of factors. One major problem is the student housing which occupies a critical area on the site. The University will replace these units elsewhere with new housing but so far lacks the necessary funds to rebuild.

Operations

As in the past several years, we have been clearing the brush and weed trees from overgrown sections in various areas of the grounds. This winter season our staff cleared a large section between the Lookout and the *Euonymus* collection. Much of the brush was chipped and spread over the cleared ground to discourage too rapid re-growth of weeds, and a small collection of true firs (*Abies*) was planted there.

On the east side of Azalea Way the hillside was cleared for the Memorial Planting. Financing for this development came from the Arboretum Foundation which donated nearly $8200 from the Memorial Fund for the basic work and plant materials and offered annual maintenance support. The plan is to develop a collection of hybrid rhododendrons developed by American hybridizers with an over-planting of Magnolias. The soil is well drained and moderately rich from years of mulch supplied by the large big-leaf maples native on the slope.

As mentioned above, too great a portion of staff time has been spent on repairing the irrigation system. When the system was turned on this April, we discovered 10 major leaks and numerous minor ones. We can safely predict that there will be at least that many more during the summer.

Pruning of winter-damaged shrubs, mostly *Ceanothus,* also required time that might better have been spent on weeding. As of this writing a major pruning job remains to be done in the *Cistus* collection

Plantings

Three new area plantings were developed plus one bed in which the character was changed. Besides the group of *Abies,* fir, planted south of the Lookout, a collection of 15 new cultivars of Japanese maples (*Acer palmatum*) was placed in Woodland Garden, mostly on the north bank, and two new camellia beds were made on the east side of Arboretum Drive E. A planting of American azaleas was placed at the west end of Loderi Valley with those given in 1977 by Mrs. Mae Granston forming the backbone. In all a total of

352 plants representing 46 genera were set out during the year, most of which went into filling out existing collections.

Plants and seeds acquired

Perhaps the most notable acquisition came from the Arnold Arboretum of Harvard University. America's oldest arboretum has been unusually generous to us in the past years, sharing plants and seeds from their collections and from various expeditions they sponsored. We were the recipient of seedlings of 76 species of Japanese and Korean trees and shrubs collected by Drs. Sponberg and Weaver who visited those countries in 1977.

Another interesting group of seeds came from the Hørsholm Arboretum, Denmark. This consisted of 14 lots of *Araucaria araucana,* the monkey puzzle tree, collected in various areas in Chile. We hope to grow these to determine if there are any provenance differences among them. Two other generous gifts of plants came from Mr. J.D. Vertrees of Roseburg, Oregon who gave a collection of 14 unusual maples (*Acer* species) and from the Saratoga Horticultural Foundation, 14 kinds of various trees and shrubs selected for testing in our climate.

In all, we received 345 packets of seeds and 172 kinds of living plant material. In return we shipped 4101 packets of seed to 220 other institutions during the 12 month period. Plants surplus to our needs are normally offered to other Botanic Gardens and Arboreta on an exchange basis. This season we distributed 103 small plants to 10 sister institutions.

Research

The Frost Hardiness and Sludge Testing Programs remain our major research activities. Dr. Kohn continued testing various half-hardy plants from the Arboretum in his laboratories at Western Washington University in Bellingham. He and his students read several papers on this work at the Northwest Science meetings this spring.

In addition to the sludge test plots for the forest tree species, a small experiment using composted sludge as a soil amendment for vegetable crops was conducted during the winter months in our greenhouses. The object of this work was to determine if composted sludge would be suitable for use in the home garden or if its heavy metal content might make it unsatisfactory. The analytical data is not yet available.

Educational activities and meetings

Mr. van Klaveren attended a class in Tissue Culture techniques in plant propagation given by Skagit Valley College in April, the Western Regional Meeting of the International Plant Propagators Society in Vancouver, Washington in October, 1978, and was in Portland, Oregon in August for the Ornamentals Northwest Short Course sponsored by the State Extension Services of Washington, Oregon and Idaho.

Mr. Witt attended the Western Regional Meeting of the American Association of Botanical Gardens and Arboreta in Tucson in April. He served as moderator and gave a short lecture to the International Society of Arboriculture's Northwestern Meeting ("Politics of Trees," I and II) in January and again in May. These meetings were held on the University campus and were jointly sponsored by the Arboretum and the City of Seattle. In September he attended a conference on the role of botanic gardens in preserving rare and endangered plants at the Royal Botanic Garden, Kew, England. A report on this conference and the visits to various Botanic Gardens and Arboreta in Great Britian was given in some detail in the *Arboretum Bulletin* (Vol. 42, No. 2, Summer 1979) and in this issue.

The staff gave 28 talks and/or demonstrations on a variety of subjects ranging from the effects of the Updated Master Plan on the Arboretum to methods of plant propagation. Arboretum classes offered through the University's office of Continuing Education totaled 17 with the staff responsible for teaching 7. These classes remain one of our best ways of communicating with the general public, and it is to be hoped that this program will be enlarged when new facilities and staff become available. Volunteers again handled the majority of our tours, relieving the staff of a time consuming chore. The guides for the entire Arboretum took 20 tours, those for the Nature Walk 66, and for the Japanese Garden 29. In total about 3170 visitors were given exposure to some features of the Arboretum. This program is largely self sufficient and needs minimal supervision or direction from the staff.

Japanese Garden

As with the rest of the Arboretum, much of the work in the Japanese Garden is in the form of a holding operation. We are assured that progress is being made toward replacement of the Tea

House and renovation of the surrounding garden area. In the meantime the major effort has been to keep the rest of the garden in good condition. The culverts which carry water away from the pond and under Lake Washington Blvd. were repaired by the University's Physical Plant Department, and Mr. Richard Yamasaki was given a contract to continue with pruning and other garden upgrading projects for the year 1979. Funds for this come from the Arboretum Foundation.

At the risk of sounding like a broken record, I have to say that the irrigation system in the Garden is in such poor condition that it may fail completely at any time. In some areas the pipes have patches on patches and nearly every week we must dig up a section for leak repair. The central control mechanism is no longer functioning and our shops tell us that it cannot be repaired since it is an obsolete model. We are managing to work the system manually but whether this can continue throughout the watering season seems doubtful.

Miscellaneous

This year we acquired for use by our nursery staff a Cushman truckster, a small three-wheeled truck, to replace one purchased in 1966. We also have ordered a new backhoe to replace the older model which was showing signs of incipient decay. Both pieces of equipment were purchased from funds donated by the Unit Council from the plant sale.

The lessening of political tensions between the United States and the Peoples Republic of China has filtered down to Arboretum level. We have received seed lists from two Chinese Gardens for the first time since 1948 and have added several books published in mainland China to our library.

The library grows slowly, most new volumes are either donations or were purchased with gift money. Several important and interesting books were added during the year. These include: *Nova Genera ac Species Plantarum,* by Poeppig and Endlicher, a reprint of an illustrated flora of Chile in two volumes purchased as a memorial to Mr. Fred Czerniski; *Magnolias* by Neil Treseder, a new and definitive horticultural work on this genus; and *Wild Flowers of the United States, Vol. VI,* by Rickett, a three-part treatment of the flora of the Central Mountains and Plains. The latter includes Washington east of the Cascades and completes the set for our library. A partial list of books acquired is listed below.

Staff

There was a change of secretaries in the Arboretum office in August, 1978 when Ms. Phyllis De Friese replaced Ms. Sally Dickman. Mr. Allen Eddy, Gardener II, resigned in January 1979 and was replaced by Mr. Fred Mauch who was promoted from Gardener I to Gardener II. Mr. Mauch's position was filled by Ms. Jeane Northey.

Brian O. Mulligan, Director Emeritus, was reelected Vice President of the Royal Horticultural

Book Accessions—June 1978 to May 1979*

THE CAMELLIA: ITS HISTORY, CULTURE, GENETICS AND A LOOK INTO ITS FUTURE DEVELOPMENT, edited by D. Feathers and M. Brown. The American Camellia Society. 1978.

DISEASES AND PESTS OF ORNAMENTAL PLANTS, by P.P. Pirone. Wiley and Sons. 1977.

DISEASES OF SHADE TREES, by Terry A. Tattar. Academic Press. 1978.

ENDANGERED AND THREATENED PLANTS OF THE UNITED STATES. Smithsonian Institution and World Wildlife Fund. 1978.

THE ENDEMIC FLORA OF TASMANIA, Part VI, text by W. Curtis, illustrations by M. Stones. Ariel Press, London. 1978.

AN ENUMERATION OF THE FLOWERING PLANTS OF NEPAL, Vol. I, by H. Hara, W.T. Stearn and L.H.J. Williams. British Museum of Natural History. 1978.

FLORA OF TURKEY, Vol. VI, by P. Davis. Edinburgh University Press. 1978.

FLORA TSINLINGENSIS, Northwestern Botanical Institute Academy of Science. Published by Academy of Science, Peking. Vol. I, Part I (1976), Vol. I, Part II (1974), Vol. II (1974).

FLORA YUNNANICA, Vol. I, edited by Northwestern Botanical Institute of Science. Published by Academy of Science, Peking. 1977.

HYBRIDS AND HYBRIDIZERS: RHODODENDRONS AND AZALEAS FOR EASTERN NORTH AMERICA, edited by P. Livingston and F. West. Harrowood Books. 1978.

MAGNOLIAS, by Neil G. Treseder. Faber and Faber, Ltd. 1978.

NOVA GENERA AC SPECIES PLANTARUM, by E. Poeppig and S. Endlicher, *quas in regno Chilensi, Peruviano et in terra Amazonica annis. 1927-32 legit,* with 300 plates, 3 volumes in 1 sm. folio (Leipzig, 1835-45), facsimile reprint. 1968.

WILD FLOWERS OF THE UNITED STATES, VOL. VI, THE CENTRAL MOUNTAINS AND PLAINS, (3 volumes), edited by H.W. Rickett. McGraw-Hill. 1973.

THE WORLD OF IRISES, edited by B. Warburton and M. Hamblen. Published by The American Iris Society through The Publisher's Press. 1978.

*The complete list of book accessions is on file in the Arboretum office.

Society at their annual meeting in January.

In September, Mr. van Klaveren received a Horticultural Journalism Award, a Certificate of Excellence for "promulgation of information on new plant releases of interest to the Pacific Northwest" from the Mount Vernon Chapter of the Men's Garden Clubs of America.

Weather

The winter 1978-79 proved to be the coldest since 1972 and many half-hardy trees and shrubs were killed or damaged. The cold period started on December 27 and for six days the temperature stayed below freezing with our thermograph registering −12.2°C (10°F) as the minimum on December 30 and 31. Not until January 2, 1979 did the maximum temperature finally rise above 0°C (32°F). Fortunately for our plants, there was very little wind and there had been sufficient cold weather to harden them prior to the end of December. A more detailed report on the cold damage will appear in a later issue. However, it might be said briefly that those plants which suffered most were from a Mediterranian-type climate. Rock roses (*Cistus*), *Eucalyptus, Ceanothus,* certain brooms and some evergreen oaks (*Quercus*) were among the most severely damaged. Most rhododendrons, magnolias, camellias and similar genera which had been damaged in previous cold periods came through with no or minor injury and most flowered very well in the spring.

A heavy wet snowfall in mid-November did break down a large number of branches and the tops of young trees—we lost the leaders on several sweet gums (*Liquidambar styraciflua*). The windstorm of February which caused havoc to the area's power lines and destroyed the Hood Canal Floating Bridge blew past the Arboretum with almost no damage. A summary of the year's weather is below:

	Precipitation		Temperature*			
			High		Low	
	mm	(in)	C°	(F°)	C°	(F°)
1978						
June	23.4	(0.92)	34.4	(94)	7.2	(45)
July	53.5	(2.11)	37.8	(100)	12.2	(54)
Aug	47.8	(1.88)	36.7	(98)	13.3	(56)
Sept	124.3	(4.89)	26.1	(79)	9.4	(49)
Oct	22.0	(0.87)	24.4	(76)	4.4	(40)
Nov	160.5	(6.32)	17.6	(64)	−2.2	(28)
Dec	25.8	(1.02)	13.9	(57)	−12.2	(10)
1979						
Jan	53.6	(2.12)	13.9	(57)	−6.7	(20)
Feb	150.3	(5.92)	17.2	(63)	−3.9	(25)
Mar	32.5	(1.28)	23.3	(74)	2.2	(36)
Apr	70.0	(2.76)	27.2	(81)	5.0	(41)
May	26.0	(1.02)	20.0	(86)	7.2	(45)
Total	789.7	(31.11)				

*Days with maximum below 0°C (32°F): 6
Days with minimum below 0°C (32°F): 32

Arboretum Foundation Annual Reports

Highlights of the Annual Meeting

The annual meeting of the Arboretum Foundation was called to order by the President, Leroy Collins, Jr., at Horatio's restaurant after dinner on June 7th. He thanked Mrs. Chris Anderson, Dinner Chairman, and the hostesses for the meeting arrangements and introduced special guests including representatives from the City of Seattle: Marvin Black, City Arborist; Councilman and Mrs. Sam Smith; Councilman and Mrs. George Benson; and Rae Tufts.

The minutes of the annual meeting of June, 1978 were adopted with the correction that Larry Waldron served on the Nominating Committee (not Jayne Waldron, as reported).

The Unit Council report was given by the retiring Chairman, Sally Sue Coleman, who introduced the new Chairman of the Unit Council, Mary Ellen Mulder. (See "Annual Report of the Unit Council" on page 32.)

Treasurer Art Gardiner presented the auditor's report for the year ending April 30, 1979. The capital assets have increased $42,700, showing a net worth of $602,672. Of this amount, about $100,000 are Unit Council funds. $75,000 has been set aside from the Tolmie Bequest to go toward the salary of the new Director of the Arboretum over a five-year period. The auditor's report is reproduced on pages 34 and 35.

Joe Witt, the Curator of Plant Collections, stated that his Arboretum Annual Report would be in the next *Bulletin*. He thanked the volunteers who "greased the wheels" all year.

The President's report began with thanks to the Officers, Directors and Committee Chairmen who have served over the last year. His detailed report is presented below.

President Collins introduced the speaker, Marvin Black, Seattle's City Arborist, who gave a stimulating and sensitive slide program showing what trees can do for an urban area. He said, "Trees give stability to neighborhoods—bring people to streets—make a city more human. Trees are more than beautification, they are survival."

Stewart Rogers gave the report of the Nominating Committee, which included Elizabeth Moses, Mary Ellen Mulder and Joy Spurr. The new officers are listed in our revised masthead (inside front cover), and the full list of directors appears on page 33.

Condensed from the Unapproved Minutes of the Annual Meeting,
Suzanne Peterson, Secretary

President's Report

The year just past was marked with continued dedication to service by members of the Arboretum Foundation. Guide programs by Unit Council members showed to great numbers of Arboretum visitors, both local and tourists, the exciting features of this great Arboretum. The Plant Sale was the best ever in terms of plant materials, support by the membership and the people of the Seattle area, and overall profits to help maintain the high quality of the UW Arboretum.

A notable event was the Horticultural Af-Fair, a brainchild of Glen Hunt, one of our directors, which introduced a number of Seattle-area high school students to things horticultural. Through lectures, slide talks and tours through the Arboretum's many interesting areas and facilities, these youngsters were encouraged to consider careers in Arboretum-related sciences and arts.

The Second Annual Horticultural Exhibit in March was a great success.

The year was also marked by an agreement between the Arboretum and the Foundation to establish a Memorial Planting, honoring bequests made over the past recent years amounting to over $8000, with the Foundation underwriting maintenance help up to $1500 per year from general funds.

The *Bulletin* continued to be published with excellent articles on matters of interest to its readers.

The Update Plan for the Arboretum (covered in previous *Bulletins,* especially in the Spring, 1979 issue) continued to attract loyal Foundation members to its support. In January there were many members present to testify at the Seattle City Council Parks and Recreation Committee hearing. Support like this was undoubtedly responsible for the continued movement of the Update Plan through its course to what we hope is completion. At the time of the annual meeting, a challenge to the adequacy of the Environmental Impact Statement (EIS) had been filed by groups in opposition. A hearing was scheduled for 28 June 1979 before a hearing examiner.

Concurrently with the foregoing, the University of Washington had decided, with encouragement from the Foundation, to establish an office of a Director of Arboreta Programs. The Foundation offered to fund a portion of the costs of the new directorship. Through subsequent Arboretum Foundation board actions, it was decided to offer $15,000 per year for five years toward this end. Other support was offered by NOHS and Mr. and Mrs. Prentice Bloedel. The University established a search program which included input from the Foundation, with the hope that the new Director could be on staff for the fall term.

Our Foundation year ended with an increase in income over the preceding year of about $50,000. Part of the increase is attributable to the new membership dues schedule approved at the annual meeting in June, 1977 and part to better rates of interest in invested funds. In reporting these events, our outgoing Treasurer, Captain (USN-Ret) Arthur Gardiner, reminded us that we had taken a step in the direction of income sufficiency but that "we still have a step and a half to go."

LEROY P. COLLINS, JR.

Annual Report of the Unit Council

I am very happy to give my annual report because I want to brag. Yes, I said brag. Not for myself but for our wonderful Unit Council members. Their accomplishments have been monumental.

First, I will mention the old standbys, the ones who make the organization function: Membership, Doris Taggart; Education, Louise Czerniski; Secretaries, Pat Moncini and Sharon Goedecke; Finance, Carol Simons; Hospitality, Helen Horrigan; Research, Mary Ellen Mulder; Slides, Carol Eckmann; Unit Program Planning, Judith Jones and Chris Anderson; Work and Fun, Mary Ann Trombold; Horticulture, Margaret Mulligan.

The Unit Council is divided into geographical districts, each of which is represented on our Governing Board by a district representative. Biannually they plan a function with the Units in their area. This year garden tours were specially featured. The work of this committee, led by the membership chairman, is ever so important. Representatives recruit new members, found new units and keep the membership informed of Unit Council activities. They are the communication link between the units and the board. Special thanks to Peggy Wilton, Mary Usack, Shirley Keith, Marcia Peterson, Kim Farwell, Marge Schilling, Jeannette Michel and Gwen Bell.

A prime function of the Unit Council is public service and horticultural education, teaching about the beauty of our area so that people—especially children—are aware of the magnificent trees, shrubs and flowers that abound in the Northwest. This year our 11 guides under Elizabeth Moses' leadership conducted 30 tours in the Arboretum for 627 people. Also, every fourth Thursday, Dora Murphy, Bob Vandenberg and Brian Mulligan lead an Explorers' Walk through the Arboretum. From 20-80 people attended each of these. Evelyn Rathje's nine Japanese Garden guides are studying "Japanese Landscapes and Gardens" through the U.W. extension course. School chairman Vera Frazier reports that she and her committee taught over 500 children about our native plants and the importance they were to our native Americans. Since there were no requests from integrated schools, Vera has prepared a letter to these school principals informing them of our teaching program. Virginia Level and Mary Dunnell now work with three nursing homes encouraging the elderly to grow and care for plants. They report glowingly of gardening as therapy. Joanne Hochberg, hospital chairman, agrees. She feels that the children at Orthopedic Hospital benefit greatly from their exposure to gardening—and they certainly have fun playing in the dirt.

Arranged by Louise Czerniski, the Unit Council sponsored classes at the University in botany and greenhouse management. This year Bettina Bailey and her herbarium committee have collected, pressed, mounted and labeled specimens from 50 plants in the Arboretum. One of each of these is on file with the National Arboretum in Washington, D.C. and the U.W. Arboretum.

Lee Clarke, past General Chairman, now writes the *Unit Quarterly News*. Through her articles she spearheaded the letter-writing and petition campaign to our City Councilmen re the Jones & Jones Update Plan. The City Councilmen will attest to her numerical success.

Our financial wizards performed miracles again this year. Bulb sale co-chairmen Jeanne Gardiner and Jane Rogers report a profit of $6,610. Suzanne Wilson, plant sale chairman, surpassed all records. The profit is $27,800. A total of 600 volunteers worked on the sale. This is indeed remarkable. So much work goes into this sale I often think that if all 600 volunteers were paid 5¢ an hour, we would have zero profits. Need I add that people in the Northwest love plants, especially unusual varieties, not just the supermarket specials. Many of these unusual and rare specimens were grown in our Patricia Calvert Greenhouse under the watchful eyes of Mary Sambrook and June Skidmore and their committee. This greenhouse co-chairmanship requires dedication, knowledge and commitment to the Arboretum. We certainly owe these ladies a debt of gratitude.

Two new exciting projects were launched this biennium. The Second Annual Horticultural Exhibit for the public was held this year in March, chaired by Ruby Williams. It was a show of color, beauty and fragrance. The 800 who attended, especially the bus load of senior citizens, were

most enthusiastic and thrilled with the display of plants. One guest remarked, "This is more beautiful than Chelsea."

The other new undertaking, brainchild of landscape architect Glen Hunt, was a Horticultural Af-Fair for high school students from King, Kitsap, Snohomish and Pierce counties who are studying horticulture. We assisted Mr. Hunt and the State Department of Public Instruction. For the students, it was an exciting educational day at the University and in the Arboretum. Mr. Art Nelson, State Director of Vocational Agriculture, has requested that this be an annual af-fair.

I thank all the wonderful volunteers in the Unit Council and Foundation and especially Rip Collins. But most of all I want to thank Joe Witt who was so kind and helpful to me. I truly enjoyed working with all of you. When I became chairman, one friend gave me a bit of advice. I would like to pass it on to our new chairman, Mary Ellen Mulder: When in charge, plunder; when in doubt, delegate; when in trouble, mumble!

SALLY SUE COLEMAN
Unit Council General Chairman, 1977-1979

Active Directors of the Arboretum Foundation

1979-1982

Bruce A. Briggs
Mrs. Boyd Bucey
Miss Phyllis Cavender
Mrs. Daniel Coleman
William O. Griswold
Glen Hunt
Mrs. Allen D. Moses
George Willner

1979-1981

Mrs. Jack Docter
John Fellows
Mrs. Arthur P. Gardiner
Mrs. Nancy Clarke Hewitt
Mrs. Gordon Logan
Mrs. Gordon Mulder
Col. T. (Ted) A. Rathje
John S. Robinson
Mrs. Harry Slater
Mrs. William Speidel
Lynden Watts
Mrs. W.E. Williams

1979-1980

Dr. Neil D. Adams
Mrs. Fred G. Clarke, Jr.
Harry Davidson
Richard Eberharter
Mrs. George Frazier
Mrs. John Ormsby
John A. Putnam
Kenneth Sorrells
Mrs. Raymond Taggart
Richard Vinal
Lawrence Waldron

Honorary Board of the Arboretum Foundation

Mrs. Hugh Baird
John F. Behnke
Robert J. Behnke
Mrs. Robert Berry
Dean James S. Bethel
John A. Blethen
Mrs. Prentice Bloedel
Prentice Bloedel
Mrs. James Brennen
Mrs. Joseph P. Butler
Mrs. Edward E. Carlson
Mrs. C. Spencer Clark
C. Spencer Clark
Mrs. John A. Clark
Mrs. H.P. Clausing
Dr. Dale W. Cole
M.C. Collarino
James C. Coons
Mrs. M.L. Cropley
Donald C. Davis
Mrs. Elliott DeForest
Edward B. Dunn
Ford Q. Elvidge
Mrs. Allen B. Engle
Mrs. Donald G. Graham
Mrs. Ray Granston
Mrs. Conner E. Gray
J.A. Green
Joshua Green, III
Mrs. Everett Griggs, II
Dr. William H. Hatheway
John Hauberg
Jackson K. Holloway, M.D.
Mrs. Charles H. Hyde
Mrs. Henry C. Isaacson
Dr. Arthur Kruckeberg
Dean Gordon D. Marckworth
Joseph Marshall
Donald K. McClure
Mrs. Horace W. McCurdy
Mrs. Moritz Milburn
Mrs. G.O. Moen
Mrs. Brian O. Mulligan
Brian O. Mulligan
Mrs. Rex Palmer
Mrs. Leon A. Phillips
Giacomo Pirzio-Biroli, M.D.
Mrs. F. Arnold Polson
Mrs. Hazel Pringle
Mrs. Robert Read
Fred M. Robbins
Mrs. John S. Robinson
Mrs. Henry Schmitz
Mrs. Maxwell J. Short
C. Edward Simons, Jr., M.D.
Mrs. Roger Spurr
Mrs. Lester O. Trabert
Mrs. Kerry Trimble
Mrs. Corydon Wagner
Mrs. George Weyerhaeuser
Capt. W.R. Wilson
Mrs. Joseph A. Witt
Joseph A. Witt
Mrs. Walter Wyckhoff
Lake Washington Garden Clubs:
Mrs. H.P. Clausing
Seattle Garden Club:
Mrs. Edward W. Andrews, Jr.
Tacoma Garden Club:
Mrs. Dan Hewitt
Washington State Federation of Garden Clubs:
Mrs. Helen Tracy

THE ARBORETUM FOUNDATION

STATEMENT OF CASH RECEIPTS, DISBURSEMENTS
AND CHANGES IN CASH BALANCES

	Year ended April 30, 1979					Year ended April 30, 1978
	Unrestricted	Restricted	Building Fund	Endowment Trust Fund (Note 4)	Total all funds	Total all funds
Receipts:						
Dues	$ 35,519				$ 35,519	$ 30,524
Donations	4,633				4,633	5,707
Unit Council-						
Plant and bulb sales	65,839				65,839	51,609
Other	1,342				1,342	2,853
Interest on savings and investments	37,896	$ 472	$ 14,626		52,994	26,412
Income from investment trust				$1,205	1,205	1,068
Sale of investment in Prudential Insurance Company investment plan						13,038
Advertising and miscellaneous	5,027			790	5,817	7,506
Repayment of advances to University of Washington Press (Note 2)	22,000				22,000	
	172,256	472	14,626	1,995	189,349	138,717
Disbursements:						
Salaries and wages	18,860				18,860	16,101
Payroll taxes	1,873				1,873	1,539
Bulletin and publications	24,344				24,344	25,280
Publicity	3,235				3,235	3,446
Purchase of annuity contract (Note 3)						10,078
Printing expenses (printing of "Woody Plants")						11,531
Retirement gift						2,100
Other operating expenses	10,207			400	10,607	16,510
Purchase of investments				790	790	453
Unit Council expenses-						
Plant and bulb sale costs and expense	38,600				38,600	29,003
Utilities, supplies and postage	8,355				8,355	7,013
Donations to University of Washington Arboretum	19,320				19,320	18,712
Donations to Japanese Garden	12,453				12,453	
Donations to Memorial Area	8,180				8,180	
Donations to frost hardiness study						8,654
	145,427			1,190	146,617	150,420
Excess (deficit) of receipts over disbursements	26,829	472	14,626	805	42,732	(11,703)
Transfer of Endowment Fund income	500			(500)		
Cash balance, beginning of year	402,741	4,895	152,294	10	559,940	571,643
Cash balance (including short-term investments), end of year (Note 1)	$430,070	$5,367	$166,920	$ 315	$602,672	$559,940

See accompanying notes to statement of cash receipts, disbursements and changes in cash balances

THE ARBORETUM FOUNDATION

NOTES TO STATEMENT OF CASH RECEIPTS, DISBURSEMENTS AND CHANGES IN CASH BALANCES

YEARS ENDED APRIL 30, 1979 AND 1978

The Arboretum Foundation was formed on June 11, 1935 to help promote and assist the development and maintenance of the University of Washington Arboretum, Botanical Garden and Herbarium.

NOTE 1- CASH BALANCES:

The cash balances, including short-term investments, at April 30, 1979 and 1978 were as follows:

Deposited with	April 30 1979	April 30 1978
Commercial accounts:		
Peoples National Bank	$ 5,151	$ 9,644
Rainier National Bank	250	3,813
Savings accounts:		
Washington Mutual Savings Bank	10,835	13,135
Prudential Mutual Savings Bank	8,757	34,700
Bank notes, Rainier National Bank	-	200,000
Banker's acceptances, Rainier National Bank	487,656	-
U.S. Treasury bills, at cost which approximates market	-	298,613
Merrill Lynch ready asset account	89,683	-
Seattle-First National Bank trust account	315	10
Cash on hand	25	25
	$602,672	$559,940

NOTE 2- ADVANCES:

In prior years, the Arboretum Foundation has advanced funds to the University of Washington Press to assist in financing publication of books which are beneficial to the Foundation's interests. During the year ended April 30, 1977, the Foundation advanced $22,000. The advance was repaid during the current year. No additional advances were made.

NOTE 3- RETIREMENT FUND:

During the year ended April 30, 1978, the Foundation invested $10,078 in an annuity contract to provide retirement benefits for Mrs. Marilyn Holm, the former Executive Secretary. The annuity contract is for ten years beginning in 1987 with 1987 with the Arboretum Foundation named as beneficiary of the balance if Mrs. Holm is not then living. The market value of the contract at April 30, 1979 and 1978 was $10,977 and $10,225, respectively.

NOTE 4- ENDOWMENT TRUST FUND:

On March 10, 1944, a trust agreement was established between Seattle-First National Bank, as trustee, and the Arboretum Foundation for funds bequested to the Foundation. Pursuant to the trust agreement, the principal of the Endowment Trust Fund may not be disbursed prior to March 10, 1994 and at that time is to be disbursed to the University of Washington for use in its arboretum. The trust agreement may be extended by mutual consent of the parties. The principal is invested with Seattle-First National Bank in common stock and bond funds. At April 30, 1979 and 1978, the balances in the principal account at cost were $16,285 with a market value of $16,638 and $16,626, respectively.

Announcements from the Unit Council

The Unit Council meetings are scheduled for September 20th and November 15th of 1979 and March 20th and May 15th of 1980 at St. Stephen's Episcopal Church in Laurelhurst from 9:30 to noon. Jody Logan, Horticultural Chairman, will present a display of plant material. Joe Witt will bring us up to date on what's new in the Arboretum. Loretta Slater will display and discuss her outstanding selection of books. In November Margaret and Brian Mulligan will present a program on their English garden tour.

There will be a series of "Getting to Know Your Arboretum" tours in the fall. The dates will be announced in the *Unit Quarterly News*.

Richard van Klaveren will present a *greenhouse management* series: four two-hour sessions in the Arboretum greenhouse, Wednesdays from 1 to 3 PM on February 6, 13, 20 and 27, 1980. Class size is limited to 17. Charge is $18. Call the Arboretum Foundation office, 325-4510, for reservations.

Bonsai techniques for beginners and intermediates: Connie Raphael is offering 10 classes in each series, four in the fall and six in the spring. The intermediate series begins on Tuesday, October 9th and the beginners' series on Wednesday, October 10th. The price for intermediates will be $65 and for beginners $75 (including two trees and potting soil). To register, call Mrs. Raphael at 282-7630.

MOLLY WOLFE

Is this the year that you can make the time to share your love of plants and the Arboretum with others? Guiding in the Arboretum or making school or hospital visits is a rewarding and enriching volunteer experience. Each tour is a change and adds to your own knowledge, as well as providing fresh air and exercise and a feast for your eyes.

An introduction to the Arboretum and all the guide programs will be held on September 11 at the Arboretum from 10-11:30 AM. For reservations and dates of additional training sessions, call:

General Tours: Ginny McElwain, 523-1725
Native & Foster Island: Sheila Taft, 523-5027
Japanese Garden: Evelyn Rathje, 283-3692
Schools: Vera Frazier, 364-7066
Hospitals: Joanne Hochberg, 232-3294

ELIZABETH MOSES
Guide Coordinator

9th Annual Arboretum Foundation Fall Bulb Sale

October 2 & 3 — Arboretum Office Parking Lot

Unit Council Governing Board

Officers—General Chairman, Mrs. Gordon Mulder (Mary Ellen). 1st Vice-Chairman, Membership, Mrs. Raymond Taggart (Doris). 2nd Vice-Chairman, Education, Mrs. William Wolfe (Molly). 3rd Vice-Cochairmen, Greenhouse, Mrs. J.R. Sambrook (Mary) and Mrs. Brian Skidmore (June). Secretary, Mrs. Lucien Moncini (Pat); Assistant, Mrs. Gary Goedecke (Sharon). Finance, Mrs. C.E. Simons (Carol). Past General Chairman, Mrs. Daniel H. Coleman (Sally Sue).

Committees—Honorary, Mrs. Donald Graham (Juanita). Guide Coordinator, Mrs. Allen Moses (Elizabeth): General Guide Training, Mrs. Paul McElwain (Ginny); Native Guide Training, Mrs. David A. Taft (Sheila); Native Guide Scheduling, Mrs. James Level (Virginia); Japanese Garden Guide Training, Mrs. T.A. Rathje (Evelyn); Japanese Garden Guide Scheduling, Mrs. Leslie Y. Rabkin (Janice); Hospitals, Mrs. Donald Hochberg (Joanne); Schools, Mrs. George Frazier (Vera). Herbarium, Mrs. Dean Wilson (Suzanne). Horticulture, Mrs. Gordon Logan (Jody). Hospitality, Mrs. James Horrigan (Helen). Research/Slides, Mrs. Winston Peterson (Marcia). Unit Program Planning, Mrs. Frank Anderson (Chris). Sales: Bulb Sale, Mrs. Arthur Gardiner (Jeanne) and Mrs. N. Stewart Rogers (Jane); Plant Sale, Mrs. Jan Hansen (Carol). Unit Quarterly News, Mrs. Fred Clarke, Jr. (Lee). District Representatives: City Wide, Mrs. James A. Curry (Jeannine); East Side, Mrs. J. David Lewis (Tiki); Kitsap-Bainbridge, Mrs. Philip C. Keith (Shirley); Mercer Island, Mrs. John Hackett (Greta); North East, Mrs. Kim Farwell; North Shore, Mrs. James Schilling (Marge); North West, Mrs. Norman Hardy (Esther); South, Mrs. Fred Czerniski (Louise).

In addition we wish to call attention to Dora Murphy's contribution as leader of the Explorers' Walks. Our "Book Lady," Loretta Slater, from whom Foundation members can purchase or order books at a 10 percent discount, can be reached at 232-0456.

As of press time, a few positions had not yet been filled; these names will be announced at a later time.

New Members of the Arboretum Foundation

We are pleased to welcome the following new members (March 1, 1979 through May 31, 1979): *Contributing*—Mr. & Mrs. F. Kissel. *Sustaining*—Melissa Johnson, Mrs. Billie M. Kundahl, Fumi Yamasaki. *Family*—Liz Caldwell, Mrs. Suzanne Carlson, John P. Culver, Mrs. Judy Friedt, Mr. & Mrs. Wallace Graham, Douglas Hart, Orley & Patricia Harvey, Leland H. Hartwell, Robert & Iris Jewett, Paul H. Kurose, Mr. & Mrs. Robert Martin, Mrs. O.M. MacLeran, Mrs. Ann McLean, Mr. & Mrs. M. Noble, Mr. & Mrs. George Pope, Mr. & Mrs. Darwin Rieck, Mrs. Joseph Schembrie, Mr. & Mrs. Ron Suter, Mrs. David Wingard. *Annual*—Mrs. Andrew Alkire, Lucille Barnard, Mrs. Mary Ann Beck, Mrs. Judith Bell, Mrs. Dave Bjerke, Mamie J. Bolender, Mrs. Dottie Buffington, Mrs. Bill Burnett, Mrs. Mary D. Carbray, Mr. & Mrs. A.B. Chittick, Mrs. Myrna DeMille, Claire Hagen Dole, Gretchen Driver, Kate Dwyer, Guy L. Falskow, Jr., Mrs. Janice Feather, Mrs. Marian Felker, Mrs. Peggy Fink, Rita Fremouw, Pete Fust, Eugenie A. Godel, Marilyn M. Goebel, Mrs. Jan Griffith, Mrs. David Gusman, Douglas Hart, Mrs. Margie Hussey, Ann M. Ingraham, Mrs. Diane Istvan, Margaret Karzmar, Dora Keigley, Shelley L. Kinsman, Lake Washington Garden Club #3, Kathleen A. Landreth, Mrs. Allen Lehrfeld, Johanna Lindahl, Lelita Lopez, Tom A. Mounsey, Gary L. Nichols, Mrs. Jackie Nordstrom, Mrs. Helen Olsen, Alice Ordway, Mrs. Donald Owens, Pacific Vocational Institute, Mrs. Alvin Peterson, Mrs. John Petterson, Mrs. Harold Pinsch, Mrs. Marjorie Porte, Mrs. Lois E. Prestrud, Anne K. Rowe, Mrs. Joan Scarboro, Mrs. Susan Scheer, Linda Schorr, Richard Schultz, Ann Sebeste, Mr. & Mrs. L. Senters, Jim Shepherd, Mrs. W.E. Sieverts, Mrs. Alyson Cooper Smalley, Theo C. Smid, Mrs. Margaret Squire, Gregory D. Steeber, Tam O'Shanter Garden Club #1, Bob L. Templeton, Denise B. Timmerman, Mrs. June Van Leynseele, Victoria Horticulture Society, Mrs. Evelyn Walseth, Mary K. Whittington, Mrs. Douglas Will, Mrs. Margaret Will, Helen Wiseheart, Mrs. Gordon Wright, John Wyble.

Book Reviews

NEW WESTERN GARDEN BOOK, 4th edition, by the editors of *Sunset Books* and *Sunset Magazine*. Lane Publishing Co., Menlo Park, Ca., 1979. 512 pp. Price $9.95.

This new edition has 64 pages more than the previous one, published in 1967, allowing it to contain several new features that make it more useful to the average amateur gardener. In addition, it covers a wider area of the western states than earlier editions since it now includes climate zone maps for Montana, Wyoming, Colorado and New Mexico.

A new Plant Selection Guide on pages 97 to 160 is printed in colors on a heavy coated paper; this includes trees, screens and hedges, ground covers, vines, and all kinds of drought-tolerant plants, besides other categories. All are arranged alphabetically in each section, with figures to show in which climatic zones they can be grown. Many of the luscious color plates therein are obviously of Californian gardens but a good number could be changed and adapted for the Pacific Northwest by substituting other plants.

Basic Planting and Care has added sections on annuals, bulbs and perennials and has more information on vegetables, including useful charts showing when to sow seeds or set out plants for various crops in the different climatic zones. Six pages are devoted to descriptions and drawings of garden tools.

The largest part of the book is the Western Plant Encyclopedia (pages 161 to 505), also increased over the 1967 edition. Scientific names follow *Hortus III* (1976). Each genus listed has at least one small drawing to illustrate usually the flowers and foliage but sometimes an entire tree or a bamboo plant; leaves are col-

ored green. In large genera such as the junipers, magnolias, pines or primroses where columnar charts or tables are used to subdivide the many species or cultivars, two different shades of green color are used alternately to separate and distinguish the columns.

This Encyclopedia is limited to those plants which are now or have recently been available in the western states. It seems both unfortunate and distinctly regrettable to this reviewer that only two species of mountain ash (*Sorbus*, section *Aucuparia*) are listed and that one of them is the shrubby *S. tianshanica*, which is quite rare and not worth garden room because of its failure to flower and fruit adequately. This is particularly so when we have an excellent shrubby species (*S. scopulina*) native to many of the western states which does fruit regularly and heavily in Seattle. Further, there are about half a dozen other Asiatic species making very ornamental small trees which flourish in western Washington and Oregon and probably in northern California as well, providing heavy crops of red, white, pink or yellow fruits from September to December. The lack of interest shown in them by most nurserymen is hard to comprehend, since they can be propagated both by seeds as well as by budding or grafting for selected forms. Amongst them are *Sorbus cashmiriana* and *S. prattii* with white fruits, *S. commixta* with red, *S. hupehensis* with pink, and 'Joseph Rock' with golden yellow.

A final new feature of this revised edition is a Glossary consisting of five pages of commonly used horticultural/botanical words, such as *node, stolon* and *pseudobulb*; this should save some time referring to a dictionary. Taken in all, this is a most practical and handy work for gardeners within the area covered, as was the previous edition. Perhaps the addition of family names for each genus would be of value, and certainly inserting the original home or country of origin of as many plants as possible is desirable; quite a number are missing in this volume.

BRIAN O. MULLIGAN

The Botanical Garden of the University of British Columbia has recently issued four new publications. They are:

PLANTAE OCCIDENTALIS: 200 YEARS OF BOTANICAL ART IN BRITISH COLUMBIA, by Maria Newberry House. Technical Bulletin No. 11. Bot. Gdn., U.B.C., Vancouver, B.C., 1979. 132 pp. Price $8.95

This beautifully illustrated catalogue was published to accompany the recent exhibit of botanical art at U.B.C.

PHENOLOGY OF CULTIVATED RHODODENDRONS IN THE LOWER MAINLAND OF BRITISH COLUMBIA, by Keith L. Wade. Technical Bulletin No. 10. Bot. Gdn., U.B.C., Vancouver, B.C., 1979. 233 pp. Price $8.25.

This compilation, collected over three years, gives the flowering times of 220 species and 340 hybrid rhododendrons. Since our climates are similar, the information should be applicable to rhododendron gardeners in our area.

GARDENING AS THERAPY: A RESOURCE MANUAL FOR DEVELOPMENT OF HORTICULTURAL THERAPY PROGRAMS FOR THE SPRING SEASON, by Margaret E. Coxon. Technical Bulletin No. 5. Bot. Gdn., U.B.C., Vancouver, B.C., 1978. 36 pp. Price $4.25.

GARDENING AS THERAPY: A RESOURCE MANUAL FOR DEVELOPMENT OF HORTICULTURAL THERAPY PROGRAMS FOR THE SUMMER SEASON, by Margaret E. Coxon and David Tarrant. Technical Bulletin No. 6. Bot. Gdn., U.B.C., Vancouver, B.C., 1979. 34 pp. Price $4.25.

Parts one and two of a projected four-part series, these manuals are designed as a teaching guide for instructors and participants in a hortitherapy program such as our hospital and nursing home committees provide.

Readers are reminded that these and other books may be ordered through the Arboretum Foundation Book Committee, Loretta Slater, Chairman, 232-0456.

1979 NOHS FALL PLANT FESTIVAL
a special sale
for discriminating gardeners

Bellevue Square Pavilion
September 28 and 29
Friday 10 to 6 Saturday 10 to 1

University of Washington Classes

Spectrum, the quarterly journal for Continuing Education, is sent free to those who have indicated interest in the University of Washington's night courses, adult education classes, concerts and other programs. Those who wish to obtain early notice of such classes and registration forms are urged to place their names on the mailing list by calling 543-2590.

Continuing Education

IDENTIFYING MUSHROOMS OF THE PACIFIC NORTHWEST. Designed for persons with no special scientific background, this course will deal with common mushrooms of the area. Fresh specimens will be studied on the basis of field identification with a minimum of microscopic analysis. The course will also include information about where and when to look for mushrooms, poisonous or edible properties, methods of preservation. One or two optional Saturday field trips to be arranged, weather permitting. Text: *How to Identify Mushrooms to Genus I: Macroscopic Features,* Largent. Instructor: Daniel Stuntz, Professor, Botany. Monday, September 24 - November 26 (third session: Wednesday, October 10; eighth session: Wednesday, November 14); 7:30-10 PM; 10 sessions, $45.

GREENHOUSE GARDENING. Topics will include information on: greenhouse design and construction; plant propagation; plants suitable for greenhouse culture; fertilizers and plant nutrition; potting mixes; plant pests and diseases; plant and supply sources; gardening literature and much more. One session will be a field trip to an established greenhouse. Instructor: Diane Varney, M.S., Botany. Thursdays, October 4 - November 29 (holiday November 22); 7:30-9:30 PM; 8 sessions, $35.

SOLAR ENERGY AND ENERGY CONSERVATION FOR NORTHWEST HOMES. An introductory course designed for homeowners, backyard tinkerers and others interested in energy conservation and solar use. Topics include the availability of solar energy in western Washington, some designs used for water and space heating in passive solar buildings and how they work (Trombe wall, roof pond, attached greenhouse, etc.), cost-effectiveness of various home insulation measures, basic components and operation of solar panels, and examples of innovative materials and devices. Instructor: Angela B. LaVigne, Adjunct Assistant Professor, Architecture. Tuesdays, October 2 - December 4; 7:30-9:30 PM; 10 sessions, $40.

Arboretum Courses

ORNAMENTAL TREES AND SHRUBS FOR THE GARDEN. Identification and effective use of 50 exotic and native ornamental shrubs and trees especially well-adapted to Pacific Northwest gardens, large and small. Course will include information on plants for special uses, such as fall color, fragrance, drought and shade. Instructor: Pat (Duxler) Penfield. Most class sessions will be conducted outdoors. Class limited to 15; meet at Arboretum office. Saturdays, Oct. 6 to 27; 10 to 12. 4 sessions, $12.

IDENTIFICATION OF NATIVE TREES AND SHRUBS. Course will cover over 60 species native to western Washington, placing emphasis on botanical and distinctive identifying characteristics. Also discussed will be habits, distribution, ranges, and medicinal and commercial uses. Instructor: Carla Culver. Class limited to 20; meet at Arboretum office. Saturdays, Sept. 29 to Oct. 20; 10-12. 4 sessions, $12.

FALL TOURS. Tours of the Arboretum grounds in fall color. Instructor: Joseph Witt. Class limited to 25; meet at Arboretum office. Saturdays, Oct. 6, 20; Nov. 3; 9:30-11:30. 3 session, $10.

PLANT PROPAGATION. Mr. Richard van Klaveren, Arboretum Propagator, will teach techniques for propagating woody plants, including cutting and seeding. Materials and plants furnished. Class limited to 15; meet at Arboretum greenhouse. Saturdays, Oct. 13 & 27; 9:30-12. 2 sessions, $12.

PRUNING ORNAMENTALS. Techniques of pruning trees and shrubs. This is an outdoor demonstration class. Instructor: Chico Narro. Class limited to 30; meet at Arboretum greenhouse. Saturdays, Nov. 3 & 17; 9:30-11:30. 2 sessions, $7.

GARDENING FOR FOOD. Learn how to grow winter and spring vegetables, and plan early for your summer garden. Chico Narro (and Dr. Stanley Gessel as guest lecturer) will teach the fundamentals of growing vegetables and fruits. Year-round gardening will be covered. Time will also be spent on choosing plants that can function as ornamentals as well as produce edibles. Seedlings will be furnished. Class limited to 15; meet at Arboretum greenhouse. Saturdays, Sept. 22 to Oct. 20; 1-3 PM. 5 sessions, $20.

PLANT AND ANIMAL INTERDEPENDENCE. This course illustrates the importance of plants and animals to one another's survival. Course will explore how plants attract insects and birds for various purposes, how insects and birds gain food and shelter from plants, and how plants and animals that help or threaten each others' survival have co-evolved. Instructor: Pat (Duxler) Penfield. Class limited to 15; meet at Arboretum office. Saturdays, Oct. 6 to 27; 1-3 PM. 4 sessions, $12.

Be sure to wear warm clothing and waterproof footgear for all courses that meet outdoors, including the gardening course. For further information on Arboretum courses, call 543-2730.

CALENDAR OF EVENTS

Arboretum Foundation:		Regularly Scheduled:	
Board of Directors	September 13	Greenhouse Day	Every Tuesday
	December 6	The Mae Granston	
Executive Committee	October 11	Rhododendron Study Group	1st Monday
	November 8	Herbarium Committee	1st Friday
		Northwest Natives	
Unit Council:		Study Group	3rd Monday
Unit Council Meetings	September 20	Rock Garden	
	November 15	Study Group	3rd Wednesday
Governing Board	September 6	Arboretum Explorers	4th Wednesday
	October 4	Additional Walks	October 10
	November 1		November 7

1979 NOHS FALL PLANT FESTIVAL
Bellevue Square Pavilion
September 28 (from 10 to 6) and 29 (from 10 to 1)

9TH ANNUAL ARBORETUM FOUNDATION FALL BULB SALE
Arboretum Office Parking Lot
Tuesday and Wednesday, October 2 and 3 from 10 AM to 4 PM
(See page 26 for details)

3RD ANNUAL UNIT COUNCIL HORTICULTURAL EXHIBIT
March 25 and 26

ARBORETUM FOUNDATION PLANT SALE
May 7 and 8

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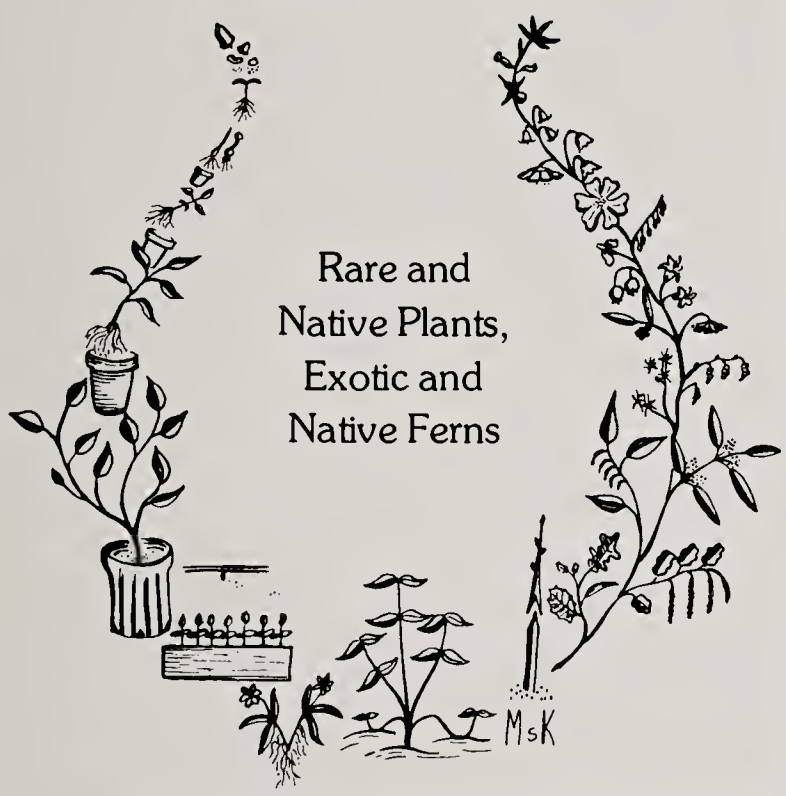

Arboretum Units, Garden Clubs and small groups are welcome to tour the Garden and Nursery.

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ADDRESS CORRECTION REQUESTED

Colchicum speciosum **'The Giant' blooming in the Arboretum in late September.** **Photo: E. F. Marten**

VISIT THE ARBORETUM IN FALL

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9TH ANNUAL FALL BULB SALE
OCTOBER 2 & 3

Join the Explorers' Walk, meeting the fourth Wednesday each month in the parking lot of the administration buildings at 10 AM, September 26, October 24, November 28 and December 26. Extra walks are scheduled October 10 and November 7.